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GETTING AHEAD OF THE GAME: A PREVENTATIVE ASSESSMENT PLAN FOR INTERCOLLEGIATE ATHLETICS

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by

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While we know much about the psychology of sport, little gets translated onto the playing field. Typically, there is only consultation when a problem arises or when performance falls short. The purpose of this study was mainly exploratory in order to gather data on three factors of mental health, find any associations between those factors, and to predict any risk factors using demographic variables. Three validated measurement tools were used to measure burnout (Athlete Burnout Questionnaire; Raedeke & Smith, 2004), depression (Beck Depression Inventory-II; Beck et al., 1996), and transition readiness (British Athletes Lifestyle Assessment Needs in Career and Education; Lavallee & Wylleman, 1999). The three measures (ABQ, BDI, and BALANCE) were found to be positively associated based on non-parametric correlation analyses. Medium to large effect sizes were found between each pair, indicating that there are possibly shared factors between depression, burnout, and transition risk. Multiple regression analyses indicated no significant demographic predictors of burnout, depression, or transition readiness. The results of this study show that most student-athletes in this sample are at mild risk for burnout, depression, and transition issues. Mental health screenings, like this one, can provide valuable information to athletic administrations and help avoid larger issues in the future.

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CHAPTER 1

INTRODUCTION

Whether at a Little League game or an Olympic event, "sports build character" is a popular refrain. This purported relationship between athletic pursuits and pro-social personality characteristics became popular with the rise of the private secondary schools in Britain in the late 1880s (Mangan & Walvin, 1987). Here, boys competed on the field to prove that they were good leaders – both mentally and physically – and would be successful in the workforce (Armstrong, 1984). These ideals were imported to the U.S. and sport became an, "…ideological instrument for socializing American youth to the formation of a common consciousness, to a sense of common allegiance, and for different positions in the social economic and occupational hierarchy," (Sage, 1988, p. 16). Yet there is no real answer to whether sports build character. Shields and Bredemeier (1995) concluded that the both the terms "character" and "sport" are often too broad and undefined.

There are, of course, two sides to this story. On one hand, some believe that through sport participation, children become better citizens of the world. Conversely, there are those who believe that sport participation, especially at the elite level, stunts development in other areas such as moral development. The only thing scholars can truly agree upon is that sport participation at all levels has an effect on athletes – good or bad, but not indifferent (Baillie & Danish, 1992; Perna, Zaichkowsky, & Bocknek, 1996).

Physical activity and sport participation have been linked to skills and personality characteristics valued by society. Not only does sport participation develop sport-specific skills, but it also has a positive effect on general physical abilities and physiological functioning (Brown, Glastetter-Fender, & Shelton, 2000; Cornelius, 1995; Martin, 1999). Leadership and

communications skills have also been found to develop in the context of sport participation (Baillie & Danish, 1992; Phillips & Schafer, 1971). Internal factors, such as self-worth and self-esteem have been found to be positively associated with engagement in physical activity, especially organized sport (Nelson, 1983; Sands, 1978).

Sport involvement has also been associated with the development of detrimental characteristics. An athlete may invest all their time and energy into their sport, thus foreclosing development on all other identities. Other pursuits such as education and career plans may not get the attention required for success (Blann, 1985; McPherson, 1978). The earlier sport participation begins, the more likely the athlete identity is to become highly salient (Broom, 1982). While we know that there are many wonderful side-effects of sport participation, there are also downsides, particularly in the area of psychological health.

The current study assesses several psychological factors related to the mental health and performance of collegiate athletes, referred to as student-athletes (S.A.). Although we have become accustomed to the term, the phrase "student-athlete." was developed in the 1950s by Walter Byers and his team. In his 1995 book *Unsportsmanlike Conduct* Byers described how the term was crafted to avoid paying workers compensation to collegiate athletes. Regardless of the term's origin, it is heavily used today often in combination with the phrase, "a student first, an athlete second," when referring to athletes still in high school or college. Yet as any student athlete knows, this balance is often very difficult to achieve as each role requires a significant amount of time, effort, and investment.

The overarching goal of this study is to increase understanding of psychological well-being in a population of S.A.s. When deciding on what variables to measure, I considered the accuracy of measurement, time taken to measure, and importance of each variable. Based on

these considerations I chose to measure three factors, as this would keep my survey to under 30 minutes. I specifically chose burnout, depression, and transition out of sport because existing measurement tools are both valid and reliable for this population, and I felt from my personal experience and research that these were important to psychological well-being. Quantifying these variables were achieved through implementation of existing measurement tools. Data from the assessments were used to evaluate the current state of S.A. psychological well-being. Preventative methods will be suggested based on best practices and recommendations in the current literature.

In the current research, burnout will be defined using the conceptual definition proposed by Raedeke and Smith (2001): complete emotional and physical exhaustion, reduced sense of accomplishment, and sport devaluation. Burnout will be described as a process, not as a dichotomous category. Therefore, the Athlete Burnout Inventory, created by Raedeke and Smith (2001), will be used to determine the level of burnout experienced by the athlete.

Depression will be defined using the Diagnostic and Statistical Manual of Psychiatry's (DSM) two-factor criterion: depressed mood and lack of interest/enjoyment in things formally found to be enjoyable. [Sub-clinical depression, or depressed mood either does not meet the 14 consecutive day requirement or does not include the required symptomology]. Symptoms of clinical depression include sad/depressed mood, loss of interest/pleasure, changes in appetite, disordered sleep, fatigue, increased purposeless physical activity, feelings of guilt, trouble concentrated, and thoughts of death/suicide (American Psychiatric Association, 2016). Depression will be measured using the Beck Depression Inventory. Using data from this inventory, lifestyle changes or referral to campus counseling services will be recommended.

Transition out of sport will be defined primarily using Coakley's 1983 description that

athletes end sport participation/competition and turn their attention towards other activities and relationships. The operational definition of sport transition will also be informed by Schlossberg's 1981 life transitions research. Here, a transition includes the concept of changing assumptions regarding one's place in the world and consequential changes in actions and relationships. Transition out of sport will be measured using the BALANCE (Lavallee & Wylleman, 1999). Predictors of the difficulty of transitions (e.g., injury, athletic identity, and self-perception) will be used to guide recommendations in addition to results on the BALANCE.

CHAPTER 2

LITERATURE REVIEW

Burnout Defined

Burnout is a term that is used liberally in the sporting world. Articles about the next top athlete to experience burnout or "how-to" guides on avoiding burnout all together are quite familiar. Yet for a concept so common there is no singular definition. In a 2015 article on the future of the burnout syndrome, Bianchi, Schonfeld, and Laurent concluded that the construct of burnout is built on a fragile foundation, both clinically and theoretically. This sentiment was echoed in a 2018 paper by Gustafsson, Madigan, and Lundkvist, in which the authors critically examined the concept of burnout. Yet while there is no true consensus, most descriptions of burnout in sport include aspects of the operational definition proposed by Raedeke and Smith (2001), who define burnout broadly as the complete physical and mental exhaustion due to engagement in practice and competition.

History of Psychological Burnout

Now common in our lexicon, psychological burnout was first described in the 1970s by two independent researchers, Herbert Freudenberger and Christina Maslach. The first use of the term burnout as we know it today came from a conversation Maslach had with a group of lawyers. Because many of their clients experienced extreme poverty and difficult interpersonal relationships, their lawyers often experienced emotional exhaustion. Within the ranks of poverty attorneys, they used the term burnout. Maslach and her collogues began to use this term to describe a similar phenomenon in helping professions (Maslach & Schaufeli, 2017).

In a 1974 theoretical paper on the topic of psychological burnout at a free clinic in New York City, Freudenberger defined burnout as, "to fail, wear out, or become exhausted by making

excessive demands on energy, strength or resources," (p. 159). This definition seems to stand the test of time. Freudenberger goes on to describe physical signs (e.g., lingering cold), behavior signs (i.e., "the burnout candidate finds it just too difficult to hold in feelings"), who is predisposed (i.e., "the dedicated and the committed"), prevention (e.g., preventative training, regular breaks, physical exercise, etc.), and how to help those who have burned out already (e.g., take a long break from work, provide support, etc.). This first attempt to assess, prevent, and treat burnout led to Freudenberger's later burnout work.

Maslach's 1978 examination of burnout in the mental health/helping professions paved the way for a description of the burnout syndrome. Here, burnout was defined as, "a form of stress…[that] produces loss of positive feelings, a kind of emotional exhaustion" (Maslach, 1978, p. 56). In her 1978 study of 76 members in San Francisco mental health facilities, Maslach found several strong correlations between length of time in the field and attitudes about the work. Put simply, the longer the individual had been in the mental health field, the more negative their attitude. This ultimately reduced the quality of work (patient care). Included in this text were best practices to reduce burnout including, but not limited to, physical exercise, meditation, and cognizant interpersonal skill training.

During the 1970s, burnout research was focused on, "describing and naming this new 'syndrome'," (Heinemann & Heinemann, 2017, p. 3). In 1981, Maslach and Jackson set out to measure experienced burnout and published the first version of the Maslach Burnout Inventory (MBI). Then in 1986, Maslach, Jackson, Leiter, Schaufeli, & Schwab published a revised MBI that included 22 seven-point Likert scale items with three subscales (emotional exhaustion, depersonalization, and personal accomplishment). The development of the MBI changed the focus of burnout research.

After appearing on the scene in studies of workplace behavior, burnout was not investigated in the sport domain until 1984. Caccese and Mayerberg (1984) blazed the trail with their seminal study to, "assess the level of perceived burnout in college athletic coaches, and to determine whether male coaches differed from female coaches in level of burnout." (p. 279) Using the Maslach Burnout Inventory, the researchers found that males and females differed on both the personal accomplishment and emotional exhaustion subscales. These gender differences, the researchers hypothesized, were primarily due to differences in interpersonal communication expectations, not innate abilities of men and women.

During the 1990s, burnout became a buzzword within sport culture (Goodger, Lavalle, Gorely, & Harwood, 2010). This led to the popularization of the term within the research in the sport domain. For most of the 1990s, however, burnout was used to describe a wide range of behaviors and emotions (Burisch, 1993; Einsiedel & Tully, 1981; Smith, 1986). Therefore, a cohesive and universal definition was needed.

The effects of stress on burnout were studied extensively in the 1990s. Burnout was described in a 1991 study by Ganster and Schaubroeck as a type of stress in a study of the effects of work stress on health. On a study on the generalizability of burnout symptoms, Cordes and Dougherty (1993) found burnout to be, "…clearly distinguished, both conceptually and empirically, from other forms of stress," (p. 651). While burnout was accepted to be either a type of stress or simply stress-related, it was still unclear why some individuals were more susceptible to burnout than others (Pines, Schaufeli, Maslach, & Marek, 1993).

During the late 1990s and early 2000s coping resources and their effect on stress and subsequently burnout were investigated. Several interrelated factors were identified during this time related to burnout including: social support, coping mechanism, sleep patterns, fitness

levels, nutrition, time management, and external resources (Cordes & Dougherty, 1993; Williams et al., 2001). Yet the debate continued as to the direction of the relationship between these factors. Raedeke and Smith (2004) examined whether lack of social support and coping lead to burnout, developed simultaneously with burnout, or moderated the strength burnout.

In 1997, Raedeke used cluster analysis to group athletes into categories defined by the existing literature. He defined burnout as a, "chronic psychological syndrome consisting of emotional and physical exhaustion, reduced sense of accomplishments, and sport devaluation" (p.398). As this was the first study of its kind, this definition of burnout was quickly adopted by other researchers in the field including Cresswell and Eklund in 2003, and Goodger et al. in 2007.

By the 2000s the term burnout was used not only by sport psychologists, but also by athletes, coaches, and fans (Raedeke, 1997; Vealey, Armstrong, Comar, & Greenleaf, 1998). Due to its popularity in the media, athlete or coach burnout was so ubiquitous as to give the onlooker, "powerful visual images, but, despite the vividness of such images, there remains much debate as to the definition and measurement of burnout in the sport setting," (Goodger et al., 2007, p. 128). To complicate matters more, burnout was even less understood within applied psychology (Raedeke, Lunney, & Venables, 2002).

In order to operationally define and measure burnout in the sport domain, Raedeke and Smith (2001) developed a psychometrically valid and reliable measure of athlete burnout: the Athlete Burnout Questionnaire (ABQ). This measurement tool was developed using 236 age-group swimmers. Data from this study, informed by exploratory factor analysis supported the proposed structure of athlete burnout: emotional/physical exhaustion, reduced sense of athletic accomplishment, and sport devaluation. At this point, there were several accepted definitions of

burnout, outlining specific mental, emotional, and behavioral symptoms. Yet the difficulty in differentiating withdrawal, stress, and dissatisfaction due to burnout versus other factors loomed large (Smith, 1986). Furthermore, the widely used Maslach Burnout Inventory was developed within the mental health domain and needed to be, "…modified to account for contextual differences between the role of human service providers and athletes," (Raedeke & Smith, 2001, p. 282).

By the mid-2000s, researchers began to accept a multidimensional definition of burnout (Raedeke & Smith, 2004). Based on the results of their 2001 study, Raedeke and Smith coined this accepted multifaceted definition of burnout. Burnout symptomatically was now defined as, "…physically and psychologically exhausted from the demands of training and competing, perceive a reduced sense of accomplishment, and experience sport devaluation in which they stop caring about sport and their performance," (Raedeke & Smith, 2001, p. 283). It became clear during this time that burnout not only leads to reduced performance (complete cessation of competing in some cases), but also negative psychological outcomes, such as increased anxiety, depression, and negative attitudes (Maslach, Schaufeli, & Leiter, 2001).

It was clear, by the 2000s, that burnout was a serious and prevalent issue. Gould & Dieffenbach hypothesized in 2002 that it was perhaps due to the increased stress placed on athletes of the era. Increased training loads, number of competitions, and pressure to perform may lead a greater percentage of athletes to experience signs of burnout. Time for recovery was also limited, as the "year-round" athlete became the norm (Weinberg & Gould, 2007). For many athletes the, "…assertion is that sport at the highest level has evolved into a year-round endeavor, often with a blurred boundary between the competitive season and off-season," (Gustafsson, Kentta, & Hassmen, 2011, p. 4).

By the mid-2000s, researchers began to accept a multidimensional definition of burnout (Raedeke & Smith, 2004). Research in the late 2000s continued to use the operational definition posited by Raedeke (1997), but began to view it as a process, not an event or a personality flaw. Several researchers during this time described burnout as a process that develops gradually overtime (Gustafsson, Kentta, Hassmen, Lundqvist, & Durand-Bush, 2007; Schaufeli & Buunk, 2003).While the basic definition of burnout – the Raedeke and Smith (2001) definition of chronic emotional and physical exhaustion – remained the same, researchers began to expand their search to other correlates and consequences of burnout. Not only can burnout lead to behavioral changes (such as quitting sport or reduced effort), but it also leads to emotional, cognitive, and motivational changes (Goodger et al., 2007). Athletes experiencing burnout are more likely to be depressed and/or anxious, have thought disturbances (such as negative self-talk), and experience a drastic reduction in motivation (Gustafsson, Hassmen, Kentta, & Johansson, 2008).

Today, burnout is defined using a multidimensional construct that includes: emotional and physical exhaustion, a reduced sense of accomplishment, and sport devaluation (Gustafsson et al., 2017; Raedeke & Smith, 2009). Not much has changed since Maslach (1982) original definition and Raedeke's (1997) adaption of burnout to the sport domain. Outside of sport, investigation into the concept of burnout has continued (Shirom & Melamed, 2006). Martinent et al. (2016) challenged the assumption that the three dimensions of burnout develop simultaneously, or whether all three must be present for an individual to experience burnout. Additionally, according to Gustafsson, Madigan, & Lundkvist (2018), the established definition of burnout, "…is based neither on clinical observation nor on theory. Yet within the sport domain, the three dimensions of burnout have largely been accepted and little research has been

conducted on the basic concept," (p. 2).

The Importance of Burnout Prevention

Most athletes will experience fatigue and exhaustion due to aerobic build-up phases of training (Gustafsson, Madigan, & Lundqvist, 2017). For most, this state subsides after a short recovery period. A smaller subset of athletes (one to eleven percent) experience some symptoms of burnout but will not experience the extreme "downward spiral" of burnout. One to two percent of athletes will experience, "…a more serious and chronic state of exhaustion that eventually can lead to a total withdrawal from sport indicative of burnout (Gustafsson et al. 2007; Raedeke & Smith 2009). When considering millions of athletes in the United States alone, this one to two percent becomes quite meaningful.

Given these vague estimates we only have a sense of burnout prevalence. According to a 2017 review and recommendation paper on the topic of burnout, there is a current, "…lack of information regarding the prevalence of burnout, an over-reliance on cross-sectional, correlational designs, and limited research focused on treatment and prevention," (Gustafsson, DeFreese, & Madigan, 2017). Therefore, with this study I seek to inform the current body of literature on the prevalence of burnout within the collegiate athlete population.

Another angle to understand the likelihood of burnout is to examine interdisciplinary research. Psychological burnout occurs outside of the sport domain and has been studied in various populations including but not limited to teachers, oncologists, and social workers who were found to experience burnout at a rate of approximately 30%, 44%, and 23-38% respectively (Blanchard et al., 2010; Kimes, 2016; Rudow, 1999). More important to our discussion is an examination of burnout rates for medical students, another student population under high stress levels. In a 2010 study on burnout in medical students, Santen, Holt, Kemp, and Hemphill found,

"A high degree of burnout was demonstrated in 2% of the first-year class, 15% of the second-year class, and 10% of the third-year class. A moderate or high degree of burnout was seen in 22% of the first-year class, 37% of the second-year class, and 41% of the third-year class" (p. 758). While generalizations cannot be made between medical school students and student athletes, it is important to note that the timelines of these two endeavors are the same – four to five years. Both experiences require intense work and focus, and leave little time for external activities. If we examine the statistics for high degree of burnout, there is the consistent two percent found in both sport and medical students (Raedeke & Smith, 2009). [However, there is an interesting trend in the numbers. As medical students progress, their risk for a high degree of burnout increases, would this same trend occur for student athletes? Also, the second set of statistics is of particular interest to this research. Here, the authors examine not only a high degree of burnout, but also a moderate degree of burnout. These numbers are very high ranging from 22 to 41% and increasing as the student progresses through the program. During this period of intercollegiate athletics, student athletes are progressing through their majors and completing more advanced course work, while still refining their athletic skills. Therefore, it is my belief these numbers may serve as a better guide to the prevalence of burnout in collegiate student athletes.

In addition to the numbers and lack of cohesive definitions of burnout, we also must understand the underlying causes of burnout to prevent it. Our understanding of burnout has largely been affected by the fundamental attribution error, originally coined by Lee Ross in 1977. This process dictates that we perceive the negative actions of others to reflect internal or inherent characteristics of that individual (e.g., she ran that stop sign because she is reckless). Yet for our own negative actions, we perceive the cause to be external (e.g., I ran the stop sign because I did

not see the sign until it was too late). The layman's understanding of burnout follows this line of reasoning. Coakley described this assumption in his 1992 paper on the topic of athlete burnout: "Overall, burnout among young athletes has been and continues to be viewed as a problematic characteristic of individuals." (p. 272) Therefore, when developing intervention strategies, they are largely focused on, "the character and coping skills of individual athletes," not the, "social problem rooted in the social organization of high-performance sport itself," (Coakley, 1992. p. 272). Recommendations provided to the athletic administration in this study will include not only team evaluations, based on individual data, but also team/organizational culture recommendations that attempt to mediate some of these social problems examined by Coakley.

Models of Burnout

The models of burnout used in this study have been carefully selected due to their historical importance (Cognitive-Affective Model of Athlete Burnout), robust nature (Commitment Perspective, Self-Determination Theory, and Integrated Model of Burnout), and focus on psychological underpinnings (Empowerment Model). This is not, however, and exhaustive list of burnout models either within the sport domain or in the broader context. Models that emphasize physiological responses are not the focus of this investigation. Therefore, I will not be reviewing stress models such as the Total-Quality Recovery Model, the Failure Adaptation Model, or Stress-and-Recovery Model (Kallus & Kellmann, 2000; Kentta & Hassmen, 1998; Tenebaum, Jones, Kitsantas, Sacks, & Berwick, 2003). Both the Total-Quality Recovery and the Stress-and-Recovery Models posit that burnout is the ultimate consequence of consistent exposure to stress without periods of recovery. The Failure Adaptation Model, on the other hand, goes beyond stress and recovery and includes additional variables such as context and personality (Goodger et al., 2007). These models are an important aspect of the investigation

of burnout but lie outside the scope of this study.

Smith's Cognitive-Affective Model of Athlete Burnout

The first model of athlete burnout was published in 1986 by Smith. In this model, personality and motivational factors dictate perception of each situation, and the athlete's cognitive appraisal of the potentially stressful situation drives subsequent psychosocial responses. All athletes experience stress (physical, mental, and/or emotional), and it is their personality factors and level of motivation that guides the cognitive appraisal. During cognitive appraisal of the situation, the athlete experiences physiological responses and considers several factors: demands, resources, consequences, and "meaning" of consequences. If cognitive appraisal results in a perceived overload, the athlete will experience: low predictability, low control (helplessness), low meaningful accomplishments, lack of meaning and devaluation of self-activity. Conversely, if the cognitive appraisal results in perceived challenge that can be overcome, the athlete will experience increased motivation, sense of accomplishment, etc. In sum, cognitive appraisal leads to a behavioral and/or coping mechanisms.

If the athlete perceives overload, these perceptions will lead to psychological and physical responses such as: tension, anger, anxiety, depression, insomnia, fatigue, and illness susceptibility. If the perceived overload continues, the athlete will experience burnout, defined in this model as: high/conflicting demands, low social support, low autonomy, low rewards, and low demands (boredom). Finally, task behaviors (what you see on the field/court) include: rigid/inappropriate behavior, decreased performance, interpersonal difficulties, and withdrawal from activities. For the full visual layout of this model, see Figure 1.

Negative-Training Stress Response Model

Focused more on the physiological factors that lead to burnout, Silva developed the

Negative-Training Stress Model in 1990. This model was tested on a sample of 68 collegiate-level athletes. Differing definitions lead to a, most likely, over-estimation of burnout in this sample. Therefore, the results, including the robustness of this model, should be interpreted cautiously (Gustafsson, Madigan, & Lundkvist, 2018). While Silva was not the first to link excessive training to burnout, he expanded our understanding of how various states of training stress are related to burnout (i.e., overtraining and staleness).

An assumption of this model includes the use of both periodized and overtraining, typical in elite athlete training regimens. Periodized training is a training strategy in which athletes cycle through high-volume and high-intensity training loads followed by a lighter training loads (i.e., rest or taper). Overtraining is a cycle (sometimes within periodized training) in which athletes train at near maximum capacity. It is important for athletes, coaches, and administrators to understand that an overtraining level is unique for each individual. Overtraining for athlete A might be considered a lighter load for athlete B. Within the Negative-Training Stress Response Model, overtraining has a different meaning; here overtraining indicates training loads that are too intense and prolonged for the athlete to adapt.

In this model, the athlete experiences training stress (e.g., excessive training, increased intensity, or increased training load) and will follow one of two paths: positive adaptation or negative adaptation. Positive adaptation results in enhanced performance, while negative adaptation results in a series of stages that, if not corrected, will lead to burnout and withdraw from sport. Negative adaptation, as described by Silva (1990) is both physical and psychological in nature, and exists on a continuum of intensity. Following a negative adaptation to training stress, there is a lag in training gain. If the negative adaptation to training stress continues, it can result in a more severe condition called overtraining syndrome.

Overtraining syndrome is characterized by a long-term performance decrement and mood disturbance from which recovery may take several weeks or months (Kreider et al., 1998). Overtraining syndrome has three stages: staleness, overtraining, and burnout. Staleness is the physiological state of overtraining in which the athlete has difficulty maintaining standard training regimen and can no longer achieve previous performance results, colloquially known as a plateau. In response to staleness, many athletes will increase their training loads to counteract their drop in performance thus overtraining. Overtraining often involves mood disturbances. Finally, if the overtraining continues or the athlete tries to "push through" the plateau, it is likely that they will reach the burnout phase. Burnout, according to Silva, is the psychophysiological response to ineffective efforts to meet excessive demands, involving a psychological, emotional, and sometimes physical withdrawal from an activity in response to excessive stress or dissatisfaction.

In summation, this model describes the process of burnout. At each juncture in the model, the athlete will experience training stress. If the athlete responds positively, they will experience growth. Conversely, athletes who experience negative-stress responses to training will enter into a later stage of the burnout process (e.g., overtraining to staleness). For the purpose of the current study, we wish to catch athletes early in the burnout process in order to prevent total burnout.

The Sport Commitment Model

This model is an expansion of the Investment Model proposed by Rusbult (Gabriele, Gill, & Adams, 2011). The Investment Model was used to predict satisfaction in romantic relationships, in addition to commitment to maintaining the relationship over time (Rusbult, 1980). The Sport Commitment Model, therefore, is used to explain commitment not to another person but to sport. Sport commitment within this model is defined as, "a psychological state

representing the desire or resolve to continue sport participation," (Scanlan, Carpenter, Simons, Schmit, & Keeler, 1993, p. 2). The Sport Commitment Model postulates a theoretical framework of athlete motivation that includes: sport enjoyment, involvement opportunities, involvement alternatives, personal investments, social constraints, and social support (Scanlan, Carpenter, Schmidt, et al., 1993).

Sport enjoyment is defined as the positive emotional response to the athlete's sport engagement (i.e., fun, pleasure). Involvement opportunities are those that only exist through participation in that sport (e.g., social relationships though sport, trips, etc.). Involvement alternatives are opportunities that only exist outside of the current sport participation (i.e., other extracurricular activities). Personal investment reflects the resources spent on the current sport participation that cannot be recovered if participation is ended (e.g., money, time, and potential for losing). Social constraints are the feelings of obligation to the current sport participation (e.g., "peers see me as a soccer player"). Social support the athlete feels because of their current sport participation is the final contributing factor of this model. Together these variables help to predict whether an athlete will continue to participate in sport.

Originally, this model was tested using youth sport participants. In 2003, T. K. Scanlan, Russell, Beals, and L. A. Scanlan expanded their model for elite athletes in the Project of Elite Athlete Commitment (PEAK). This project involved structured interviews of elite-level male athletes. This research supported the hypothesis that sport enjoyment and involvement opportunities are not only strong predictors of commitment, but these variables are also moderately associated (i.e., for many players the involvement opportunities increased their overall enjoyment). It is noteworthy for this current project that involvement alternatives were recast as "other priorities" thus confirming the athletes had priorities outside of sport. It was

clear from these interviews that personal investments were seen as "part of the deal," in elite level athletics, a very different view than in youth sport.

Empowerment Model

Coakley, in his 1992 investigation into the causes of burnout for athletes, describes burnout in terms of athlete empowerment. This "empowerment model" is radically different than previous stress-based models, such as Smith's 1986 Cognitive-Affective Model of Athlete Burnout. While these models do recognize situational factors leading to burnout, intervention strategies emphasize, "treating young people who are assumed to have adjustment problems or lack personal coping skills. In extreme cases, the young people are assumed to be 'sick'," (Coakley, 1992, p. 274).

This empowerment model conceptualizes burnout as an issue rooted in social structure, rather than personal failure. Coakley (1992) describes burnout to be, "grounded in a set of social relations through which young athletes become disempowered to the point of realizing that sport participation has become a developmental dead-end for them and that they no longer have meaningful control over important parts of their lives," (p. 283). Therefore, athletes who feel powerless and lack autonomy in sport are far more likely to burnout, based on Coakley's analysis.

Intervention strategies provided by this model include awareness of the following: social relationships within elite sport, level of autonomy held by athletes both in and out of sport, "the ability of athletes to critically assess why they are participating in sport,", the life-long consequences (positive and negative) of sport participation, the structural organization of elite sport, and practice and competition conditions for athletes (Coakley, 1992). Based on the key components of this model, it is a clear assumption that the goal of elite sport is to produce high-

level performances rather than social development and self-awareness. Furthermore, elite sport is organizationally structured to achieve this goal.

Several recommendations by Coakley (1992) will be used in the development of this programmatic assessment tool. In interviews with the elite burned-out athletes, Coakley (1992) found that the athletes, "…did not have the personal resources or the power needed to claim and socially construct identities unrelated to sport," (p. 276). Athlete burnout, therefore, occurs when the athlete experiences two main issues: alternative identity foreclosure, and powerlessness to control events and decisions that dictate both daily and future life.

Raedeke Commitment Perspective

This perspective introduced by Raedeke in 1997 describes sport involvement in terms of commitment type. This was the first empirical study on the topic of burnout that did not use a stress-based definition. According to this model, there are two main types of commitment athletes can experience: attraction (want to be involved) or entrapment (have to be involved). Not surprisingly, if an athlete experiences primarily entrapment, they are more likely to experience burnout compared to their peers who experience attraction.

A cluster analysis technique was used to assess theoretical determinants related to burnout. In this study 236 age-group swimmers completed a questionnaire that included three main determinants based on Maslach and Jackson's 1984 definition, but were expanded to apply to sport specific aspects. These determinants of commitment and burnout included: emotional/physical exhaustion, sport devaluation, and reduced sport accomplishment. The data were analyzed to detect fundamental patterns by separating the sample into homogeneous subgroups with maximum variance between groups. Based on their responses to these items, swimmers were placed into one of four clusters: malcontented, enthusiastic, obligated, and

indifferent. This model proved useful in the prediction of burnout, as "…the four emergent clusters based on the theoretical determinants of commitment accounted for 59% of the variance in burnout dimensions," (Raedeke, 1997, p. 409).

Athletes in each cluster had specific characteristics of commitment and rates of burnout. Two of the clusters experienced entrapment: malcontented and obligated. Those in the malcontented cluster, the smallest in this sample, "reported relatively low enjoyment, coupled with low benefits and high costs, associated with swimming compared to their peers" (Raedeke, 1997, p. 410). Additionally, their athletic identity was not salient to their core identity, experienced low investment in swimming, and reported attractive alternatives to swimming. Swimmers in this group scored highest on the dimension of burnout.

In contrast, those in the obligated cluster felt compelled to swim, while still experiencing entrapment. These athletes reported average (in the sample) enjoyment and benefits, slightly above average costs, and a mean number of available alternatives. The characteristic aspect of this cluster of obligated swimmers was their salient swim identities, high investment in swimming, and low perceived control. Burnout scores for this group were the second highest in the sample, below malcontented. According to Raedeke, "…these swimmers had characteristics that suggest they may be on the road to future burnout," (1997, p. 412).

The enthusiastic cluster described in this sample experienced attraction to swimming and scored lowest on the dimension of burnout. Athletes in the enthusiastic cluster were attracted to swimming and reported high enjoyment, high benefits, and low-cost scores (Raedeke, 1997). Their identity as a swimmer was highly salient, they were highly invested in swimming, and rated swimming high over available alternatives. Finally, enthusiastic swimmers reported high control over their sport involvement.

The final cluster included those who rated low to mid-range on all theoretical determinants. These indifferent swimmers, "…invested relatively little time and energy into swim team participation, viewed swimming as relatively unimportant to their self-identity, and perceived moderately low social contraints," (Raedeke, 1997, p. 412). Overall, these athletes reported low commitment and appeared to the researcher to have a, "…detached or apathetic attitude relative to their peers," (Raedeke, 1997, p. 412). Swimmers in this cluster were considered transient and therefore likely to discontinue swimming.

Level and type of commitment is a useful dimension of athlete experience. These four categories help to, "…capture the uniqueness of burnout by going beyond the notion that it is a simple consequence of chronic stress," (Raedeke, 1997, p. 414). While Coakley's empowerment model was the first to steer away from individual stress leading to burnout, it was exclusively focused on the social environment. This commitment model turns the focus once again to the individual athlete, but not simply on their maladaptation to sport. Using salient identity and commitment characteristics, this model can help predict burnout and therefore aid in prevention.

Self-Determination Theory

The models reviewed up to this point cannot fully explain the process of athlete burnout (Gustafsson et al., 2011). Based on the recommendations of several researchers (Cresswell & Eklund, 2005; Lonsdale & Hodge, 2011), the self-determination theory (SDT) offers an alternative framework for a deeper understanding of athlete burnout. Developed by Deci and Ryan (1985, 2000), SDT is a macro theory used to describe and classify human motivation towards tasks. SDT is comprised six sub theories: cognitive evaluation, organismic integration, causality orientations, basic psychological needs, goal contents, and relationships motivation theories. While each sub-theory is an integral part of the whole, sport psychologists generally

focus on two main sub-theories: basic psychological needs and organismic integration theories (Li, Wang, Pyun, & Kee, 2013).

According to the Basic Psychological Needs theory, humans have three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 1985). Extensive study into the pervasiveness of these needs across cultures has shown them to be universal (Gagne et al., 2014). Based on an extensive meta-analysis, burnout was found to be negatively predicted by the three basic psychological needs (Wang, Pyun, & Kee 2013).

In order to experience autonomy, an individual must have agency, control, and/or choice over actions and behavioral consequences. Generally, the more autonomy an individual possesses, the more self-determined they are indicating that those who have choice have higher levels of motivation. Furthermore, those who have lower levels of autonomy are more likely to experience burnout (Wang et al., 2013). For example, the athlete who perceives control over their practice, classes, and/or personal life will be at a reduced risk for burnout.

Competence is the drive to be effective or develop mastery in a chosen domain. The concept of competence has two important caveats: the task must align with values, and the task cannot be too easy or too difficult. Those who experience higher levels of competence in tasks that are important to them and challenging (but not impossible) have a higher level of motivation. Not surprisingly, when athletes lack competence (perceived or objective), they are at higher risk for burnout.

The final psychological need within this theoretical construct is relatedness. Relatedness, as defined by Deci and Ryan (1985) is the desire to have close, meaningful relationships with important others. In today's landscape of social media, this definition is perhaps more important than ever. Simply knowing or "friending" 100 people online does not fulfill this need.

Furthermore, the interactions must be meaningful in a world of text messages and "likes." Finally, not just anyone will do when it comes to relatedness, this person must be important to the individual. Athletes who have a sense of belonging and connectedness with important others (could be teammates, family, friends, etc.) are protected to a higher degree against burnout compared to those who have not developed these relationships.

Organismic Integration theory, one of the six sub theories of the SDT describes the various levels or states of extrinsic motivation. Simply put, the level of motivation depends on the level of autonomy. On the SDT continuum the lowest level of extrinsic motivation is external regulation. At this level, an individual engages in behavior not because of enjoyment or sense of accomplishment (intrinsic motivation) but because they seek a reward or wish to avoid a punishment. If an athlete engages in practice every day to avoid punishment from a coach, their level of autonomy is low. This athlete does not feel that they have much control or choice over going to practice. You might hear the following from this athlete, "I have to go to practice, even if I don't want to," or "I'll lose my scholarship and have to quit school," or "I have to no choice." Individuals who experience extrinsic non-autonomous motivation such as this have a high predicted burnout rate (Wang et al., 2013). For the purposes of this research, special attention will be paid to those in the external regulation category, as it poses such an increased risk for burnout.

Integrated Model of Athlete Burnout

The most recent model of burnout was proposed by Gustafsson, Kentta, and Hassmen in 2011. The goal of this model was to understand the early warning signs, causes, consequences, and major factors related to burnout. As outlined in this literature review, definitions, models, and measurements of burnout often contradict each other. In order to advance out understanding

of burnout, how to measure it, and how to prevent it, an integrated approach is required. While conceptual in nature, this model includes several domains of study including motivation, behavior analysis, self-esteem, personality, identity, motor behavior, mood states, and social relationships.

Within this conceptual model, there are three main precursor categories to burnout: antecedents, entrapment, and individual characteristics. Antecedents include but are not limited to excessive training (referred to in some models as overtraining), school/work demands, stressful social relationships, negative performance demands, lack of recovery, and early success. Of course, there are other contributing variables that can be included in the antecedent section, but these are the most common as described by Gustafsson and colleagues (2011).

Entrapment, as defined by Brockner and Rubin (1985) is, "a decision-making process whereby individuals escalate their commitment to a previously chosen, though failing, course of action in order to justify or 'make good on' prior investments" (p. 3). Here, the athlete has foreclosed on their athletic identity (being an athlete is their most salient identity), feels a high level of investment, experiences social constraints due to sport participation, has performance-based self-esteem, and low alternative attractiveness (other activities are not viewed as important in comparison with athletics).

The final category of precursors includes personality, coping mechanisms and strategies, and environment. Personality characteristics within this model include those postulated by the Basic Psychological Need Theory: autonomy, competence, and relatedness (Deci & Ryan, 1985; Ryan & Deci, 2017). For those on the road to burnout, low levels of choice over activities and structure of life are characteristics of low autonomy. Low levels of social support and social relatedness can also lead to increased chances of burnout (Coakley, 1992; Deci & Ryan, 1985). It

is also important to mention that perceived social support is often more important and indicative of burnout than actual received support (DeFreese & Smith, 2013). Athlete perfectionism, as posited by Frost and Henderson (1991) has two main dimensions: concern over mistakes and high personal standards. More recently, there has been discussion within the sport domain whether perfectionism is truly maladaptive. Perhaps, as hypothesized by Stoeber and collogues (2007), it is the negative reactions to imperfection that cause higher anxiety, not striving for perfectionism itself (which they found to lower anxiety and improve self-confidence when negative reactions to imperfection was partialled out). Finally, the athlete's goal orientation can determine risk for burnout. Achievement Goal Theory, proposed by Nicholls (1989) and adapted to sport by Duda and Hall (1991), dichotomize goal orientations as either ego/performance or mastery oriented. Athletes who determine success through self-referenced/task mastery means (i.e., improved individual performance) typically fair better than those who determine success through other-referenced/performance means (i.e., winning).

Taken together, these factors provide a comprehensive view of the athlete's emotions, cognitions, and behaviors. Based on number and level of maladaptive factors, the athlete will either fair well and improve or will move on to the early warning signs described by the model. These early warning signs include mood disturbance, elevated cortisol, diminishing motivation, frustration over lack of results, dysfunctional behaviors, lack of control, and performance decrement. Once again, this is not an exhaustive list, but includes some of the most common precursors to burnout. If steps are not taken to de-stress and recover, the athlete will enter into the burnout phase described in this model as emotional and physical exhaustion, reduced accomplishments, and devaluation (Gustafsson et al., 2011). Finally, as burnout is a process and not simply a destination, the authors list maladaptive consequences of burnout both within sport

and overall health: withdrawal from sport (partial or complete), impaired immune function, chronic inflammation, and long-term performance impairment.

Measuring Burnout: Background

Historically, measuring athlete burnout has been difficult due to a lack of validated, sport-specific measurement tools (Gustafsson, DeFreese, & Madigan, 2017; Raedeke & Smith, 2001; Weinberg, 1990). The most widely used measurement tool for burnout is the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981, 1986; Maslach et al., 1996) while the first validated measure of burnout within the sport domain was the Athlete Burnout Questionnaire (ABQ). Other assessment tools are available to measure burnout including the Oldenburg Burnout Inventory (OBI), the Tedium Measure which developed into the Burnout Measure (BM), and the Copenhagen Burnout Inventory (CBI; Demerouti & Bakker, 2008; Kristensen, Borritz, Villadsen, & Christensen, 2005; Pines, Aronson, & Kafry, 1981; Pines & Aronson, 1988). For the purpose of this study, the ABQ will be used. Below is a discussion regarding the development and psychometrics of assessment tools that preceded and informed the ABQ.

Maslach Burnout Inventory (MBI)

According to the MBI, burnout syndrome is comprised of three main components: emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, Jackson, & Leiter, 1997). The MBI was developed in response to unprecedented levels of attrition of those in the helping/human services professions. Interviews, surveys, and participant observation of human services employees (e.g., mental health, social services, health care, etc.) informed scale development (Jackson & Maslach, 1982; Maslach, 1976, 1978,). The original MBI was developed to measure burnout in any profession under the human services umbrella, alternate versions of the MBI were designed to investigate burnout in other professions.

Alternate MBI forms include: the MBI Educators Survey (MBI-ES), and the MBI General Survey (MBI-GS) which measures burnout in non-human services professions.

The MBI is self-administered and takes approximately 10 to 15 minutes to complete. It contains 22 items, divided into three subscales that reflect the main components of burnout syndrome – exhaustion (nine items), depersonalization (five items), and personal accomplishment (eight items). Each item is an attitude statement (e.g., "I feel burned from my work"). Participants can then respond using a seven-point, fully anchored Likert scale ranging from never (0) to every day (6). Scores for the MBI are reported by totals for each subscale. These scores are separate and are not aggregated to form a single, total score. The scores are inherently continuous, but can be dichotomized into high, average, and low.

Throughout its history, the MBI has been tested for both reliability and validity. Numerous psychometric studies have tested the MBI in various populations and settings including but not limited to teachers, social workers, and health care professionals, and as broadly as forestry workers and dentists (Gorter, Albrecht, Hoogstraten, & Eijkman, 1999; Iwanicki & Schwab, 1981; Schutte, Toppinen, Kalimo, & Schaufeli, 2000. Test-retest and internal consistency were used to measure the reliability of the original MBI General Survey (MBI-GS). A thorough examination of psychometric properties of the MBI-GS by Bakker, Demerouti, and Schaufeli in 2002 used a sample of 2,919 participants from eight occupational groups. Test-retest reliability coefficients for the subscales were .82 for exhaustion, .60 for depersonalization, and .80 for personal accomplishment from a sample of human services graduate students. Internal consistency estimated by Cronbach's alpha determined that the measure has relatively high/acceptable internal consistency, but also that each subscale is not unidimensional. The coefficient alphas for each subscale were .90 for exhaustion, .79 for

depersonalization, and .71 for personal accomplishment. The standard error of measurement, or the deviation from the participants "true" score, was found to be 3.8 for exhaustion, 3.16 for depersonalization, and 3.73 for personal accomplishment. Total possible scores for each subscale include 0 - 54 for exhaustion, 0 - 30 for depersonalization, and 0 - 48 for personal accomplishment.

In order to be confident that the MBI does indeed measure the burnout syndrome, it was important that the authors report various tests of validity. Both convergent and discriminant validity have been demonstrated on the MBI. Convergent validity was tested using behavioral ratings reported by a significant other, correlation with job characteristics understood as contributing to burnout, and correlation to, "various outcomes that have been hypothesized to be related to burnout," (Maslach, Jackson, & Leiter, 1997, p. 198). Thus, by using measurements of theoretically similar/related constructs, we can be confident that the measure is valid.

In contrast to convergent validity, the authors also used discriminant validity. Here, researchers use measures that should, theoretically, be unrelated. The authors wanted to test not only a measure of another construct but also social desirability. When testing psychological constructs, it is always possible that the nature of some of the items can confound the results. In tests of discriminant validity, the authors used both the Crowne-Marlowe (1964) Social Desirability Scale (SD), an undisclosed measure of job satisfaction, and several undisclosed measure of depression. The MBI was uncorrelated with social desirability and negatively correlated with job satisfaction. Finally, a confirmatory factor analysis maintained that the scores of the MBI and scores from measures of depression had no significant overlap in factor loadings (Maslach, Jackson, & Leiter, 1997).

While the MBI is the most widely used and cited measurement tool for detecting burnout,

it was not developed for the sport domain. In fact, Maslach cautions researchers who plan to generalize both the definition and components outlined in the MBI to other contexts (Maslach & Jackson, 1984; Maslach & Schaufeli, 2017). A definition and corresponding measurement tool must then, "…be modified to account for contextual differences between the role of human service providers and athletes," (Raedeke & Smith, 2001, p. 282). Therefore, for the purposes of this research, the Athlete Burnout Questionnaire (ABQ) will be used. The history, development, and psychometrics are included here because the MBI laid important groundwork for measuring burnout in sport, and thus, a discussion of its properties provide relevant context for the inclusion of the ABQ in the current study.

Eades Athlete Burnout Inventory (EABI)

The EABI was the first instrument designed specifically to measure athlete burnout (Eades, 1990). The EABI largely based on the original work of Maslach et al. (1986), with further information was gathered from interviews with athletes with self-reported burn out syndrome and experiential reports from sport psychologists (Eades, 1990; Guedes & Souza, 2016). Although the development of EABI was an unpublished Master's Thesis, it was the only available assessment tool for athlete burnout for 11 years.

The EABI has 36 items and six components: 1) self-concept of athletic ability, 2) emotional/physical exhaustion, 3) psychological withdrawal and devaluation of sport participation, 4) devaluation by coach and teammates, 5) congruent athlete-coach expectations, and 6) personal and athletic accomplishment. Each item includes a seven-point Likert scale that indicates the frequency of affects or cognitions related to burnout. The score is aggregated into a single, total score with a minimum score of zero and maximum score of 216. Based on recommendations by the author, the average score from an athlete experiencing burnout is 127.

There have been few psychometric studies of the EABI and the results were mixed (Gould, Udry, et al., 1996; Vealey, Armstrong, Comar, & Greenleaf, 1998). Tests of reliability and validity were measured over the course of four studies and the EABI was administered in its final form to 183 NCAA Division I S.A.s (Eades, 1990). Vealey and colleagues reported that the EABI was reasonably reliable when five of the 36 items were deleted due to low reliability within the proposed six factor structure (1998). Gould and colleagues found the internal consistency reliability between the two subscales of the EABI to be low (1998). Several researchers within the burnout field have disparaged the EABI due to these limitations (Cresswell & Eklund, 2006, Gustafsson, Kentta, & Lundqvist, 2007).

Athlete Burnout Questionnaire (ABQ)

In response to the psychometric limitations of the EABI, the ABQ was developed (Guedes & Souza, 2016). Within the sport domain, the ABQ is the most widely used measure of burnout (Gustafsson, Hancock, & Cote, 2014; Raedeke & Smith, 2009). The definition of burnout that informs the ABQ is largely based on Maslach's 1984 definition. The items, on the other hand, are more in line with the EABI, as the ABQ and EABI share 11 of the original version's 21 items. Comparisons between the MBI and ABQ have inspired several psychometric studies (Cresswell & Eklund, 2006; Raedeke, Arce, De Francisco, Seoane, & Ferraces, 2013). Yet lack of robust statistical inference has resulted in no consensus. Neither Cresswell and Eklund (2006) nor Raedeke et al. (2013) reported factor loadings for their claims of convergent and discriminant validity, instead only reporting correlations between subscales (Gustafsson, Lundkvist, Podlog, & Lundqvist, 2016).

Within the ABQ, there are three main components: emotional/physical exhaustion, reduced sense of accomplishment of sport skills and abilities, and sport devaluation (Raedeke &

Smith, 2001). Measurement of exhaustion was expanded to include not only emotional exhaustion, but physical exhaustion as well. Depersonalization is absent within the sport domain definition, as Raedeke (1997) posits that this is not a key feature of athletic burnout. In its place, we see the inclusion of sport devaluation defined as the process of diminishing emotional engagement with their sport and performance. Psychometric properties of this assessment will be discussed in chapter 3.

Conclusion

Burnout is often seen as "normal" within athletics. Within this research burnout is operationalized as the complete mental and physical exhaustion, a reduced sense of accomplishment, and sport devaluation (Gustafsson et al., 2017; Raedeke & Smith, 2009). This, I argue, should not be normalized. It is something that should be named, discussed, and (hopefully) prevented. Burnout rates for collegiate athletes have the potential to be higher than any other population due to age of the athlete and the nature of the S.A. role conflict. In this study, burnout will be measured using the Athlete Burnout Questionnaire (ABQ) which includes the three main components outlined in our definition: emotional/physical exhaustion, reduced sense of accomplishment of sport skills and abilities, and sport devaluation. Based on data collected, I will be able to understand the aggregated burnout rate and main factors that account for these levels.

Depression

Depression is more widespread, complex, and serious than many believe. According to 2017 Global Burden of Disease study, major depressive disorder (MD) ranked third in leading causes of disability. Most consider describe depression as a singular disorder, but it is in fact a cluster of mood states. Depression can be either a root cause or a comorbidity of another condition, such as a cancer diagnosis. For this reason, depression is often, "misdiagnosed or

missed entirely and is often untreated for long periods of time," (Nydegger, 2016, p. 3). According to the U.S. Department of Health and Human Services (1999), only 23% of those diagnosed with MD seek treatment and only 10% receive effective treatment.

Defining Depression

In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), depression is broadly defined in terms of symptomology: sad/depressed mood, loss of interest/pleasure, changes in appetite, disordered sleep, fatigue, increased purposeless physical activity, feelings of guilt, trouble concentrated, and thoughts of death/suicide (American Psychiatric Association, 2013). The two core characteristics of depression, helpful for those looking for more heavily loaded factors, are depressed mood and lack of interest/enjoyment in things formally found to be enjoyable (American Psychiatric Association, 2016). It is common for individuals to feel one of more of these feelings occasionally; this is known as subsyndromal depression. In fact, 20% of adults and 50% of adolescents report depression symptoms at some time in their life (National Institute of Mental Health, 2013). Yet when these symptoms occur consistently, it is considered a serious medical illness known as MD. MD's prevalence based on structured diagnostic interviews are approximately 1% in children, 2-4% in adults, and 6% in adolescents (Kessler, et al., 2001; Merikangas & Angst, 1995; WHO International Consortium in Psychiatric Epidemiology, 2000).

Depression can be described in terms of emotional, motivation, behavioral, cognitive, and physical symptoms (Nydegger, 2016). Common emotional accompaniments to depression as described by patients include feeling misery, empty, worthless, etc. Motivationally, the individual will often describe a lack of desire to do the thing that once brought pleasure. Behavioral markers of depression can include sleep disturbances (either sleeping too much or too

little), isolation from others, and even a lapse in normal hygiene. Cognitively, the depressed patient's thought patterns are often pessimistic, including a negative self-concept. Some clinical depressed individuals experience issues with memory and attention. The physical symptoms of depression are often the most widely varied but can include fatigue, headaches, extremes in nutrition (eating too little or too much), etc.

For a diagnosis of clinical depression from the DSM-V, timing and persistence of symptoms are taken into account. On average, depression first appears during adolescents, specifically between the late teens and mid-20s (Kessler, 2005). To be considered major depressive disorder, symptoms must last for approximately 14 consecutive days.

Subsyndromal Depression

While there are far fewer adolescents with MD than those classified with subsyndromal/subclinical depression – 6% and 50% respectively – this age group is reported to have 75-100% greater rates of MD compared to other life stages (Gotlib & Hammen, 2008). Due to the severity and required documentation of clinical symptoms, many individuals either are not tested or do not quite meet the threshold of MD. Yet, for most (if not all) individuals, subsyndromal depression precedes MD. In a longitudinal study of adolescents, subsyndromal depression was found to be a powerful predictor of a later MD diagnosis (Angst, et al., 2000). Even when the threshold of MD is not met, it is important to address issues of depression early to curtail or even prevent a more serious mental illness in the future. Therefore, for the assessment of S.A., subsyndromal depression will be considered an important factor in both physical and psychological health outcomes.

History of Depression

Depression, in contrast to burnout or life transitions, is not a newly studied type of human

experience. In fact, it has been acknowledged as a clinical syndrome for over 2000 years even predating our modern understanding of mental health (Beck & Alford, 2009). Throughout history, as documented by philosophers, healers, shamans, medicine men, priests, writers, doctors, psychiatrists, and psychologists, we as humans have struggled with depression – both to understand and treat it.

For somatic diseases, physicians are on much firmer footing with medical advancements and increased understanding of the human body. This is not true for psychiatric disorders, "…in which cultural imperatives still play a paramount defining role in the absence of any sure knowledge of causation," (Oppenheim, 1991, p 317). Even now, armed with "modern medicine", we are still faced with the multifaceted phenomenon that is major depressive disorder. We are left with theories that change over time, treatments that work for some but not all, and an unprecedented rise in the incidence of this disease despite our best efforts (Hasler, 2010). In order to understand depression as a cultural construct, we must examine it in context throughout history.

It is impossible to know when depression was first experienced by humans. But we do have evidence of a written record of depression from Ancient Mesopotamia, Ancient Egypt, and Ancient India beginning around 2000 B.C.E. (Davidson, 2008). Typically, in these ancient texts, depression was attributed to humans' relationships with the gods. Angering or disappointing a god resulted in the affliction of depression. Documents still used today, such as the Jewish Torah and Christian Bible, describe symptoms and states of depression that would be recognized by a modern clinician.

Greco-Roman Depression

The Ancient Greeks and Romans had a more modern approach to depression. The

writings of Hipprocates (460-377 B.C.E.) and Galen (129 – 210 A.D.), coined depression as Melancholia, accompanied by specific and clinical descriptions such as food aversions, insomnia, irritability, and misery. Melancholia, a term corresponding to an excess of black bile in the body, was described as a mental disorder caused by brain dysfunction. Here we see the first record of depression caused by forces within an individual (the brain) as opposed to being attributed to the spiteful gods of yesteryear. In the theory of the time presented by Pythagoras and Empedocles, the four humors (blood, phlegm, yellow and black bile) were to be in complete balance in the healthy individual. The goal of any treatment, therefore, was to balance the humors. Fever was believed to be caused by too much blood, causing the body of overheat, and bloodletting was the usual treatment. In the same way, melancholia was believed to be caused by an imbalance of black bile. This was considered a serious illness, for if an imbalance of black bile was left untreated, it was believed to cause cancer (Mukherjee, 2010). This theory was used, with only minor variations, for the next 1500 years. Furthermore, we see echoes of the humoral theory in our cultural lexicon as in words such as phlegmatic, choleric, and sanguine (Davidson, 2008).

Middle Ages

The Humoral Theory endured into the Middle Ages within the two main geographic locations of medical advancement: Europe and Arabia. Several physicians expanded on the humoral theory, such as Avicenna of Persia (980 – 1037 A.D.) who authored *The Book of Healing* and *The Canon of Medicine* both of which were used as a standard medical text until the 1700s (Jacquart, 1996). Here, the humoral theory of temperaments linked humoral imbalance not only with disease, but also with elements, qualities, and demeanor.

During this period, the Christian Church turned away from the brain as the cause of

melancholia and toward supernatural explanations. The demon of acedia (or accidie) was also known as sloth, one of the seven deadly sins in the medieval Latin tradition. When described, acedia begins to look familiar with both somatic and psychological pains including: fatigue, general debility, ennui, and discouraged thoughts (Crislip, 2005). These pains were believed to be caused by possession of the demon of acedia who weighs down the soul and body, slowing siphoning away their soul from their earthly form. Yet while Islamic tradition held that those who were depressed were not to be blamed but helped by a physician, those in the Christian tradition believed that the sufferer was responsible for their possession (Crislip, 2005).

1500s – 1800s

During the 16th, 17th, and 18th centuries, other theoretical orientations to mental health began to emerge. Perhaps the most notable contribution was Robert Burton's *Anatomy of Melancholy.* The Oxford University clergyman first published this encyclopedic work in 1621 and while it broadly supported the humoral theory, nuance was added to include other factors including poor diet, excess alcohol consumption, sleep disturbances, and intense love or grief (Davidson, 2008). This departure from a singular cause of depression (i.e., demonic possession or excess of black bile) paved the way for a more holistic understanding of the mind and body.

By the end of the 19th century, the term mental depression replaced melancholia, which had become such a colloquial term as to be useless (Davidson, 2008). During this period, there was an outcry from clinicians for an accepted description of mental disorders. Not surprisingly, this resulted in difficulties in diagnosing. Some, like Charles Mercier in his book *Sanity and Insanity,* argued against endless categories of depression and instead focused on in-depth, idiosyncratic descriptions of a singular disease state (1899).

1900s

In the late 19th and early 20th centuries, we saw a rise in the scientific study of melancholia/depression relatively rare since the Grecian and Roman Empires. During the late 1800s, several scientists working both independently and in correspondence worked to classify mental health disorders (Jackson, 1986). Among these researchers were Kraepelin, Freud, Meyer, and Rado.

The German psychiatrist Emil Kraepelin used longitudinal data from those in his care to distinguish the somatic manifestations of mood disorders from schizophrenia and bipolar disorder (Kraepelin, 1917). Not only did Kraepelin categorize disease states, he also pioneered comparative sociocultural psychiatry in which he used similar long-term data collection techniques to investigate culturally dependent mental disorders (Jilek, 1995). Kraepelin was also one of the first to differentiate incurable from curable depression, and acquired from hereditary depression (Jackson, 1986).

Clinical interventions (apart from prison-style life sentences popularized by Bedlam and other such asylums) began to outline specific types of mental disorders with the ultimate goal of managing patient comfort. In a detailed account of Kraepelin's research, Jackson (1986) wrote, "concerned as he primarily was with detailed considerations of course and outcome and essentially convinced of the inevitability of the diseases course, Kraepelin approached treatment mainly in terms of management and symptomatic measures" (p. 132).

As Kraepelin looked to the body to explore depression, Sigmund Freud and Adolf Meyer focused on the mind. Freud's psychoanalytic approach framed depression as a byproduct of past trauma: "a combination of early emotional losses being rekindled by later losses in adulthood," (Fisher & Greenberg, 1996, p. 39). Freud's (1917) "Mourning and Melancholia" used both terms

melancholia and depression. Depression was used to describe aspects of mental health, whereas melancholia was the diagnosis. Freud believed that his patients' "depressive affects" stemmed from issues in sexual experiences and development. Freud thought that the melancholic (depressed individual) mourned over "loss of libido" (Freud, 1917, p. 201). In fact, Freud connected depression to mourning so closely based on overlapping definitions. Melancholia, he posited, included painful dejection, loss of interest in the outside world, loss of capacity to love, inhibition of all activity, and a lowering of self-regard. Mourning included all aspects but the lowered self-regard. Therefore, he wrote in his 1917 book, both melancholia and mourning are consistent, but melancholia lacks an "apparent cause."

Working in correspondence with Freud, Adolf Meyer applied the emerging therapeutic style of psychoanalysis to understand experiences of patients. The psychobiological approach preferred by Meyer, "…emphasized the uniqueness of individual patients and conceived mental disorder as a reaction to current stresses and past maladjustment," (Davidson, 2008, p. 49). Meyer was also one of the first contemporary researchers to strongly recommend nutrition counseling (especially those that included small, frequent meals), outdoor exercise, evening baths, and massage.

Other researchers during this period took the views of Freud and Meyer, but generalized not only to sexual experiences, but relationships and connections in all forms. Karl Abraham was the first to document extensive clinical psychoanalytic data on depression, and the first to empirically link anxiety and depression in 1927 based on papers published posthumously (Abraham, 2018). Abraham wrote extensively on the idiosyncrasies of depression but summed up the general state of depression beautifully in 1927 when he wrote, "Every neurotic state of depression, just like every anxiety state, to which it is closely related, contains a tendency to

deny life," (p. 138). He also posited that while depression/melancholia could not be directly passed down through generations, there appeared to be a predisposition for mental health issues. This distinction was important to Freud, as depression could not simply be predicted by familial depression. He did, however, find that his patients with melancholia often had blood relations with other mental disorders (such as hysteria, mania, or schizophrenia).

Another innovator of the 20th century was Sandor Rado. Writing "The Problem of Melancholia" in 1928, Rado hypothesized that depression was a "cry for love." This disease, he wrote, was characterized by a decrease in self-esteem and a belief in their moral inferiority (Psychoanalysis of Behavior, 1956). Melancholics were dependent on others for self-esteem and lacked what today we could call grit. Grit, as coined by Angela Duckworth (2016), is defined as the passion and perseverance for long-term goals. Treatment, according to Rado, emphasized the sequence of guilt, atonement, and forgiveness.

Modern Approaches to Depression

The latter half of the 20th and now the 21st century has characterized depression as biological, psychological, and sociocultural. Biological approaches to depression treat mental health diseases much in the same way as physical diseases, such as the medical model used in the DSM. Evolutionary underpinnings question the inherent maladaptive nature of depression. Finally, psychological approaches to depression focus on the individual's perception and include therapeutic methodologies such as Freud's psychoanalysis, client centered counseling, and mindfulness mediation.

Biological. Biological themes have been prominent throughout history as an explanation for depression. Beginning with the four humors and demonic possession, humans have used these shifting theories to explain why humans experience such extreme and persistent sadness.

Family history of mental disease, first documented by Karl Abraham, continues to be part of our understanding of the epidemiological structure of depression. In 1965, the monoamine hypothesis of depression was devised after a drug used to treat hypertensive vascular disease was found to produce a depressed affect. This drug (reserpine) reduced the number of monoamines available in the brain, thus providing scientists with evidence that specific neurotransmitters absence could lead to depression (Shore et al., 1957).

According to the monoamine hypothesis, the underlying cause of depression is a diminution in the levels of serotonin, norephedrine, and/or dopamine in the central nervous system (Delgado, 2000). The first antidepressants came on the scene in the 1950s, but it was not until the advent of Prozac in the 1980s that a safer and more effective treatment for depression became available. The basic classes of monoamine-based pharmacological depression treatment drugs include SSRIs (i.e., selective serotonin reuptake inhibitors), monoamine oxidase inhibitors, and tricyclic antidepressants. Other atypical antidepressant drugs have been developed more recently such as Wellbutrin, Cymbalta, and Brintellix (Hillhouse & Porter, 2015).

With the advent of neural imaging in the early 1970s, scientists have been able to examine structural differences in the depressed brain with greater precision. I have included only a brief overview of these methods here, as they are outside the scope of this paper. In 1979, Cormack and Hounsfield won the Nobel Prize for their development of the computerized axial tomography (CAT or CT scan). In the 1980s, magnetic resonance imaging (MRI) was developed by Mansfield and Lauterbur, who also won the Nobel Prize for this work but not until 2003. Other types of neuroimaging developed concurrently included single photon emission computed tomography (SPECT), positron emission tomography (PET), and electroencephalography (EEG). Using technology from PET and MRI scans, scientists developed the functional magnetic

resonance imaging (fMRI) in the 1990s. This type of imaging has dominated brain mapping diagnostics because it is generally safer for patients compared other methods. Generally, neuroimaging allows doctors, scientists, and researchers to view the structure and function of the brain to view "timing and spatial localization of cerebral function, structure, or changes in these properties of the brain," (Brammer, 2009, p. 389).

Evolutionary Psychology and Depression. In order to understand the high prevalence of depression in our current society, other societies, and throughout history we must examine depression in the context of human evolution. If depression is maladaptive, as many social scientists believe, why is it so common – not only today, but historically as well? Some evolutionary psychologists have challenged this norm and posit that depression may give the individual some physical and/or social advantages, thereby increasing overall fitness (Watson & Andrews, 2002).

The conversation about theorized adaptive qualities of depression begins with its prevalence. Depression is considered by some to be universal, existing cross-culturally (Nesse, 2009). Even when we turn to traditional, (i.e., hunting and gathering) societies we still see high rates of depression. In a 1979 observation of the !Kung people of Southern Africa, Howell was taken aback to find depression common even among a society untouched (at the time) by Western culture (Howell, 2017).

The study of evolution and the development of specific traits posits that characteristics that increase fitness will be passed on to successive generations. Fitness in this sense does not always mean overall fitness, it can also be specific fitness (e.g., tall stature). Tall stature requires a larger number of calories for survival (maladaptive when calories were hard to come by) but very adaptive when picking fruit from tall trees or seeing over tall grasses. Tall individuals will

be more likely to bear children, thus siring more height-inclined offspring.

Historically, depression was viewed as a costly trait to individuals from an evolutionary standpoint, and thus viewed as maladaptive. Yet because of its prevalence we know that, "Genes for depression would not have evolved unless they conferred net benefits," (Watson & Andrews, 2002, p. 2-3). Therefore, there are two main explanations: either depression is, in fact, adaptive or is maintained by pleiotropy (i.e., genes that code for proteins involved in multiple traits). The latter reasoning informs the maladaptive byproduct hypothesis. Depression is the price to pay for advantageous traits such as high emotional sensitivity or empathy.

Psychological. Freud's legacy on psychological inquiry has been extensive. While many disagree with his intense focus on the sexual as the great initiator of all disease, we must admit that many of Freud's hypotheses and methods have followed us well into the 21st century. The effect of childhood trauma is still one of the most discussed issues in the therapeutic setting. Depression's definition has also remained relatively constant throughout history, from the early discussion and treatment of melancholia to clinical interventions of the 21st century.

Many clinical trials have examined the efficacy of psychological treatments for depression (*Cuijpers, 1998*; Luborsky, 2002; *Shadish & Sweeney, 1991*; *Stiles, Shapiro, & Elliott, 1986*). Generally, we see large effects sizes for psychological treatments in their ability to decreased symptoms of clinical depression and increase quality of life (Cuijpers, van Straten, Warmerdam, Smits, 2008). There are several types of psychological therapy including, but not limited to, psychoanalysis and psychodynamic, behavior, cognitive, humanistic, and integrative or holistic therapies (Kazdin, 2000).

Psychoanalysis focuses on the unconscious mind, a therapeutic process developed by Freud in the early 1900s. During psychoanalytic therapy the therapist and client work closely

together to change dysfunctional behaviors, affective states, and cognitions. Psychodynamic therapy is also concerned with the unconscious mind and its effect on daily function. Today, psychoanalysis and psychodynamic therapy are widely used and have evolved to include four main schools of thought: Freudian, Ego Psychology, Object Relations, and Self Psychology (Barry, 1999).

Behaviorism, as a therapeutic approach, reached the height of its popularity in the 1950s. Behavioral interventions are concerned with overt action, not with cognition of affect. Behavior, therefore, according to this doctrine can be fully explained by events external to the individual, as opposed to those internal thoughts and feelings. Classical conditioning, pioneered by Pavlov and his dogs, shows how organisms (dogs and humans alike) can be taught to respond to a conditioned stimulus (e.g., bell) by pairing it with an unconditioned stimulus (e.g., food). A modern example of classical conditioning used in therapy is desensitization, a process by which a client is repeatedly exposed to a phobia in order to reduce anxiety. Operant conditioning, pioneered by Thorndike and his famous cat boxes, outlines how organisms can be taught to behave in a specific way by introducing reinforcements and punishments. The most commonly studied of the behavior therapy approaches today is cognitive behavioral therapy (CBT; Wampold, Minami, Baskin, & Tierney, 2002). CBT helps clients build skills regarding both behaviors and thought processes.

Cognitive psychology posits that thoughts are the cause of actions, and subsequently dysfunctional thoughts lead to dysfunctional behavior. Considered by some to be the father of cognitive therapy, Aaron Beck helped shape 20th century psychological understanding of the effects of cognitions on mental health and behavior. According to his biography on the University of Pennsylvania's website, Dr. Beck is the author of more than 600 journal articles,

25 books, and five measurement scales including the Beck Depression Inventory used in this research. Albert Ellis, another innovator in the field of cognitive psychology developed a psychotherapeutic approach known as Rational Emotive Behavior therapy in which clients were taught to eliminate dysfunctional thoughts (e.g., self-defeating thoughts, irrational beliefs, and unrealistic expectations) and develop functional ones (e.g., self-acceptance, healthy coping strategies).

Humanistic psychological approaches outline the individual's capacity for rational decision making. An underlying assumption of humanistic theory is that individuals are constantly striving toward their maximum potential. Several examples of approaches include Gestalt and Existential therapies. Gestalt therapy, similar to the mindfulness zeitgeist of today, emphasizes the present and self-acceptance in the "now." Existential therapy focuses on the individual's search for meaning and self-actualization (originally from Maslow's Hierarchy of Needs).

The most common therapeutic orientation in the 21st century is the integrative or eclectic approach. This approach allows therapists to not be tied to any one orientation but instead use aspects of several in order to tailor their treatment to the individual client. Holistic approaches to psychotherapy also examine aspects of the client's life outside of those considered in traditional psychology such as physical activity, nutrition, spirituality, and general health.

In summation, depression (or melancholia) has been a topic of study since ancient times. Throughout history, there have been countless theories that attempt to explain why humans are predisposed for this particular condition. With each proposed theory, new strategies were recommended to cure the client. While we may now see the fallacy in the old methods (e.g., bloodletting or exorcisms), we must also remember that history may very well view current

methods in the same disapproving way. In the following sections, I will address the relationship between depression, exercise, and sport participation.

Depression and Elite Sport

The number of student athletes who experience depression at least once during their time in college is high by any estimate. Even conservatively, this number is approximately 85,000 athletes per year in the NCAA. There are several contributing factors: college years as a life transition stage, stressors unique to collegiate athletics, and barriers to reporting or seeking help for depression. During my research in the current literature, it became clear that there was a constant refrain in nearly every article – recommendations for depression screening tools and increased awareness/knowledge about depression in athletics. A prime example of this recommendation came from a 2015 paper by Wolanin, Gross, and Hong:

> Further research into the feasibility of appropriate depression screening procedures to identify at-risk individuals is warranted. Such screening could be a potential benefit if added to the current preparticipation evaluation (PPE) required by the NCAA, so that collegiate student athletes who may be prone to depressive symptoms can be identified early and provided appropriate follow-up care. (p. 59)

Finally, the 2018 position paper from Schinke, Stambulova, Si, and Moore published by the International Society of Sport Psychology urged "…sport psychology researchers, practitioners, sport participants, and stakeholders in understanding…interventions aimed at monitoring and maintaining athletes' mental health as well as preventing various forms of mental ill-being" (p. 1).

Physical Activity, Exercise, and Sport: A Depressing Paradox

Physical activity, exercise, and sport participation have a complex relationship with

mental health. Physical activity not only affects the physical body through increased heart rate, respiration, and muscle engagement but it also affects the brain (American College of Sports Medicine, 2009). Exercise, or pre-planned bouts of physical activity lasting more than 10 minutes, has an even larger effect on mental health and mood states. The brain "on exercise" is more active than the resting brain, as evidenced by fMRI scans pre-and post-physical activity (Erickson, Hillman, & Kramer, 2015). Exercise leads to improved brain plasticity through "…increased levels of brain-derived neurotrophic factor (BDNF) and other growth factors, stimulated neurogenesis, increased resistance to brain insult and improve learning and mental performance," (Cotman & Berchtold, 2002). After a single 10-15 minute bout of exercise, an individual experiences improved mood (Bartholomew, Morrison, & Ciccolo, 2005; Gowan, Pierce, & Jordan, 1991; Rehor, Stewart, Dunnagan, & Cooley, 2001).

Exercise prescription, or the recommendation of an exercise regimen to improve health outcomes, is often cited to decrease depression in all age groups based on anecdotal evidence, clinical observations, and epidemiological research (O'Neal, Dunn, & Martinsen, 2000). Exercise can even act as a buffer against depression (Proctor & Boan-Lenzo, 2010). The Center for Disease Control (CDC) pronounces even a single ten-minute bout of aerobic exercise per day improves mood. The CDC also encourages adults to meet the 150 – 300 minutes per week of exercise, as this may act as a preventative measure for issues such as depression (CDC, 2018).

If engaged in regularly, exercise correlates with increased mental health and well-being. This effect is not just acute. In a 1994 landmark, longitudinal study of 10,000 men, physical activity was negatively correlated with depression 25 year later (Paffenbarger et al.) Conversely a sedentary/physically inactive lifestyle appears to be associated with an increased risk for psychological disorders (Carek, Laibstain, & Carek, 2011).

In a 2013 review of 39 studies and 2,326 total participants, the relationship between exercise and depression was less conclusive. Exercise was compared to traditional (talk) therapies, antidepressant medication, and no treatments for depression. Compared to no treatment, exercise was moderately effective in reducing depression symptoms. Compared to antidepressant medications, exercise was comparable but no more effective in reducing depression symptoms. Finally, compared to psychological therapy, exercise was comparable but no more effective in reducing depression symptoms (Cooney et al., 2013).

The effect of physical activity and exercise on depression has been clearly established. If an individual engages in a single bout of exercise, their mood generally improves. Over time, chronic exercise can be a buffer against depression. Does the same effect occur after sport practice or competition?

Contrary to the mental health benefits associated with exercise, elite sport may have the opposite effect on both physical and mental health (Paluska & Schwenk, 2000). For elite athletes, the relationship between depression and practice/competition is more nuanced. Some researchers have found that sport participation is related to decreased cases of depression (Proctor & Boan-Lenzo, 2010), while others have found a positive correlation between sport engagement and depression (Paluska & Schwenk, 2000; Wolanin, Gross, & Hong, 2015). Generally, there are several key factors to a discussion of depression and elite sport: level/time spent in sport, the unique experience of elite sport during college, societal stigma, barriers to help-seeking behaviors, and possible sex and gender differences in display and treatment of depression. Even with increases in media coverage of athletes (and other celebrities) speaking out regarding mental health struggles, there is a scarcity of research on the topic of depression in elite sport (Doherty, Hannigan, & Campbell, 2016).

Not only does the reason for physical activity affect depression (exercise vs. competition), but time is also a factor. In a 2016 qualitative study of 12 elite athletes from eight sports, data revealed that sport participation began during childhood as a way to escape life stressors. Yet as the athletes progressed through sport, and entered elite sport, this changed. Sport began to be a source of stress. Autobiographical accounts indicated that, "the athletes typically reached a stage when the demands of their sport shifted from being facilitative to being debilitative in nature with an intensification of their depressive symptoms," (Newman, Howells, & Fletcher, 2016, p. 868). The authors recommend proactive, preventative approaches to depression with regards to elite athletes.

The "idealized" athlete persona (i.e., hardworking, inspiring, and intrinsically motivated) is at odds with depression. This idealized athlete image has led those in the medical profession to underestimate the number of athletes with mental health issues (Reardon & Factor, 2010). Several studies have measured rates of depression for both collegiate athletes and non-athletes, yet there is inconsistency in the findings. Proctor and Boan-Lenzo (2010) found non-athletes to have higher rates of depression than athletes, with 29.4% and 15.6% respectively. Other studies, such as the one conducted by Yang and colleagues in 2007, found that collegiate S.A. and non-athletes had similar rates of depression. Yet even with these (possibly) lower rates, we can still estimate that one in five S.A. experience symptoms consistent with clinical depression (Wolanin, Gross, & Hong, 2015). The NCAA estimates that 460,000 S.A. compete each year in the U.S., so if these predictions are correct, approximately 85,000 athletes are struggling with depression (NCAA, 2019).

Collegiate Athletics

Time spent in college, whether as a S.A. or not, is a significant transition period. Often,

life stages of adolescence and emerging adulthood are periods marked by intense life transitions (Storch, Storch, Killiany, & Roberti, 2005). Depression, in its role as the "common cold" of mental disorders, occurs at an even higher rates during college (Jones, 2010). Rates of reported depression during this time of life for the general student population, range from 19% to over 30% (American College Health Association [ACHA], 2008; Beiter et al., 2015).

Compared with the general college population, collegiate athletes may be at greater risk for depression. Sport engagement in combination with other stressors (e.g., time demands, transition out of sport, and performance anxiety) put S.A. at a greater risk for mental health issues (Gill, 2008; Proctor & Boan-Lenzo, 2010). Furthermore, role conflict for S.A.s is common (as noted previously) because they are asked to play two parts simultaneously – that of the student and the athlete (Killeya-Jones, 2005; Settles, Sellers, & Damas, 2002).

Student athletes have many possible stressors, but the one most commonly cited is the psychological distress that follows an injury (Wolanin et al., 2015). Injury and its effects on S.A.s will be discussed further in the transitions out of sport section below. A 2007 study found that approximately 80% of athletes who visited sport medicine professionals regarding a sport injury also reported psychological symptoms. Online survey data collected from 827 sport medicine physicians revealed three main areas of concern regarding the injury: fears of reinjury, fears of possible surgery, and the arduous process of recovery. Athletes also discussed stress/pressure, anxiety, and burnout as the top three non-injury related psychological concerns. Due to the frequency of psychological issues encountered by sport medicine professionals, recommendations from this study include the creation of an assessment tool to facilitate a discussion "…of these problems as well as greater communication between the mental health community and sport medicine physicians. In addition, knowledge of and access to professionals

who are specifically trained to deal with the sometimes unique psychological needs of athletes should be improved" (Mann, Grana, Indelicato, O'Neill, & George, 2007, p. 2140).

A 2013 study compared current S.A. to those who had exhausted their NCAA eligibility (i.e., retired). Depression levels were found to be higher in current S.A., although anecdotal evidence would imply the opposite. According to the authors, "…changes in lifestyle, which include loss of identity, social support, structured schedules, and peak physical fitness," were hypothesized to correlate with higher levels of depression for retired athletes (Weingand, Cohen, & Merenstein, 2013). Several factors could account for higher rates of depression for current/competing S.A. including overtraining, injury, pressure to perform, lack of free time, and stress from schoolwork. Recommendations based on these results, "call for increased awareness, education, screening, and interventions," for current S.A. (Weingand et al., 2013, p. 254).

Elite collegiate athletes may also be more susceptible to failure-based depression. In a study of failure-based depression, swimmers were asked to report mental health symptoms using both the Beck Depression Inventory and semi-structured interviews (Hammond, Gialloreto, Kubas, & Davis, 2013). This study was unique, because not only was depression measured in two distinct ways (survey and interview), but a performance measure was also taken. Swimming performance was measured using time (i.e., gaining or dropping time from previous competitions) and rank (i.e., moving up or down in current swimmer ranking). Prior to competitions, 68% of athletes met the requirements for clinical depression within the last three years. Sex differences were significant with more females reporting depression (in both interviews and survey) compared to males. This sex difference with regards to depression is consistent with other examining the intersection of mental health and sex in other sports (Altemus, 2000; Culbertson, 1997).

After competing at an international qualifying competition, the swimmers were screened again for depression. Post-competition, 34% of the athletes met the criteria for a major depressive episode, as outlined in the DSM. For those who experienced perceived performance failure (decreased rank and/or gaining time), approximately 80% experienced a depressive episode. This effect is even greater for elite (top 25% of performers in this sample), with 66% experiencing a depressive episode. Not only were with these results statistically significant based on compared means (i.e., pre-competition to post-competition, and elite with non-elite) but a regression analysis revealed that performance failure predicted depression. The authors attributed this to the highly salient athletic identity for elite athletes (Hammond, Gialloreto, Kubas, & Davis, 2013). Similar findings were reported in soccer and hockey players (Hassmen & Blomstrand, 1995; Jones & Sheffield, 2007).

Sex and Gender Differences

Males and females are socialized through societal norms, community, family, and sport (Coakley, 2017). Males, as "natural athletes," are taught to be dominating, aggressive, and space occupying; these traits are on full display in the most "masculine" sports, such as football. Conversely, females as "unnatural athletes," are taught to be gentle, humble, and graceful. Elite female athletes are often accused of being too "manly" or even of homosexuality. Since the passage of Title IX in 1972, we have seen great strides towards sex and gender equity, there are still differences in social norms between male and female sport participation.

In order to understand how elite male athletes experience, express, and respond to depression, Doherty, Hannigan, and Campbell (2016) interviewed eight elite male, self-reported depressed athletes. The masculine, elite sport environment was also investigated and informed the athlete's likelihood of help-seeking behavior. While not empirically supported indirect and

anecdotal evidence indicates that the culture of masculinity affects how men experience depression (Addis & Cohane, 2005; Cochran, 2005). Within the elite sport environment, male athletes, "…appeared to respond to depression often with further investment in sport and more atypical, externalization, or avoidance expressions of their internal distress," (Doherty, Hannigan, & Campbell, 2016, p. 1069). Externalization, according to the American Psychological Association Dictionary of Psychology Online (2018), is, "a defense mechanism in which one's thoughts, feelings, or perceptions are attributed to the external world and perceived as independent of oneself or one's own experiences." Expression of avoidance can include simply avoiding discussion of depression or even avoidance of any non-superficial conversation. Recommendations from the authors include expression of vulnerability in safe spaces, increased social relatedness, taking breaks from sport, and using skills learned in sport to process depression (i.e., commitment and perseverance).

A qualitative examination of depression in female athletes was conducted by Jones (2010) to add awareness and sensitivity to the literature. Ten female collegiate athletes were interviewed using unstructured interview procedures. Thematic analyses revealed four main categories that the women used to describe their depression: weariness, self-doubt, out of control, and nowhere to go. Dispirited weariness encompassed feelings like lack of motivation, fatigue, sadness, anxiety, loneliness, and exhaustion. Participants reported being overwhelmed due to pressure from sport and school. Self-doubt explained feelings of questioning and criticizing the self (e.g., "what's wrong with me?"). All athletes interviewed mentioned feeling out of control, recalling experiences of restriction of other activities due to time requirements of their sport. Bursts of anger and helplessness (especially when describing performance plateau or decline) were also common. Finally, the athletes interviewed talked about their considerations of quitting

sport, but ultimately decided it was too central to their identity (e.g., "I am a swimmer; I swim here.") and therefore had "nowhere to go," (Jones, 2010).

Interestingly during all interviews, gender was mentioned very little. This effect was mirrored in other studies of male athletes (Leno, 2007; Spillman, 2006). When asked about support for depression, most athletes indicated that they were not yet ready to accept help. When they were seeking help, they indicated that validation of emotions and empathy were the most important aspects. Coaches were mentioned during this study as either integral to recovery or hindering it. Those coaches that facilitated recovery developed rapport with the athletes and/or managed team dynamics/culture (Jones, 2010).

Barriers to Reporting Depression

One concern echoed by several researchers is that S.A. are less likely to report psychological distress and depression, compared to non-athletes (Proctor & Boan-Lenzo, 2010; Wolanin et al., 2015). Social desirability and mental health stigma may lead S.A. to report depression as less of a concern or simply not report it at all. A 2005 study by Glick and Horsfall of diagnosing and treating athletes found the common misconception that depression is viewed as weakness. S.A. may also have reservations about reporting depression symptoms in person or even in a survey as they are unsure what coaches or administrators will do with these data. We know that the idealized athlete is always healthy – both physically and mentally. Psychological concerns are also more difficult for athletes to report due to their invisibility. A broken arm or concussion has physical evidence, but depression or anxiety does not show up on an X-ray or MRI.

A qualitative study of 15 elite athletes (ages 16 – 23) was conducted to understand barriers to mental health help seeking behaviors (Gulliver, Griffiths, & Christensen, 2012). This

study was the first to address specific behaviors surrounding mental health treatment. Other studies have examined help-seeking attitudes within the young elite athlete (competing at the national and international levels) population and found that these S.A. appear to have negative attitudes regarding seeking mental health treatment compared to their non-athlete peers (Watson, 2005). Based on the Gulliver et al. (2012) thematic analyses, mental health stigma was the most important perceived barrier. This stigma also includes the negative perception from important others (i.e., coaches, teammates, friends, and family). Other prominent barriers included mental health literacy, difficulty in expressing emotions, lack of time, and lack of problem awareness. The most helpful facilitators of seeking mental health treatment included education and awareness of mental health issues and services, social support from important others, and accessibility (i.e., money, location, and transportation; Gulliver et al., 2012).

These results are not surprising but are illustrative. Although we cannot affect all variables listed above, many barriers and can be directly addressed via athletic administration policy changes. Creating an environment where mental health is discussed similarly to physical health would help reduce stigma, increase mental health literacy, and potentially increase emotional intelligence. Coaches and administrators must also be aware of and attentive to not only athletes' physical health but mental health as well.

Suicide in Elite Athletes

Depression not only has adverse effects on the mental and physical health of S.A., it can also lead to suicidal thoughts and even attempts. In a 2014 national study, the ACHA found that symptoms of depression are a strong predictor of suicidal behavior. For those who attempt suicide in college, 90% also experienced depression (Gonda, Fountoulakis, Kaprinis, & Rihmer, 2007; Hirsch, Webb, & Jeglic, 2011). While rates of suicidal attempts are roughly equal for non-

athletes and athletes, reasoning differs (Anchuri, et al., 2019). For non-athletes, stress is a stronger correlate, while interpersonal issues are a stronger correlate of suicide attempt for S.A.s (Anchuri et al., 2019). While suicide, suicidal ideation, and suicidal intervention are outside of the current study scope, it is important to clearly examine the potential permanent effect depression can have on the individual. Based on the ground-breaking work of Anchuri and colleagues in 2019, we now have an association between S.A. interpersonal conflicts and suicide attempts.

Conclusion

Depression has existed throughout human history in many forms from melancholia to demonic possession to mental illness. Yet the human condition's relationship with depression is still quite relevant today. According to the National Institute of Mental Health (2013), approximately 20% of adults and 50% of adolescents report depression symptoms at some time in their life. Adolescence and emerging adulthood (ages 12-30 years of age) are life stages particularly at risk for depression (Beiter et al., 2015). Collegiate athletes not only experience these life stages closely related to identity formation and transition, but they also have the added stressors of competing at an elite level (Gill, 2008; Proctor & Boan-Lenzo, 2010). To complicate matters further, barriers to reporting issues with mental health are common including mental health stigma and lack of knowledge about mental health. Understanding the unique relationship between collegiate athletics and depression will allow me to better assess, evaluate, and provide recommendations for this population.

Transition Out of Sport

In the U.S. many children begin sport at a very young age, many are only four or five years old. Top athletes like Serena Williams, Simone Biles, and Michael Phelps, began training

in early childhood: ages three, six, and seven years of age respectively. Therefore, by the time modern athletes transition out of sport, they likely have trained for over a decade, solidifying their identity as an athlete. Even if they step off the field after high school, this transition can be life-altering. For those who go on to play in college and beyond, special consideration of the transition out of sport and into a career must be carefully choreographed.

There is a wealth of literature indicating that the experience of the collegiate S.A. differs significantly from that of a non-athlete student (Ferrante & Etzel, 1991; Jordan & Denson, 1990). Research on this group indicates that while individual experiences differ, no demographic factors predict with certainty the success of the transition out of sport. For example, male and female athletes have been found to develop similar athletic role-identities (Good, Brewer, Petitpas, Van Raalte, & Mahar, 1993; Murphy, Petitpas, & Brewer, 1996). In a comparison of revenue versus non-revenue sports, athletes were not shown to differ significantly in career maturity (Smallman & Sowa, 1996). This consistency across subgroups lends itself to a, "…broad perspective, examining trends in the population as a whole," (Shurts & Shoffner, 2004, p. 96). Thus, we need not reinvent the wheel for each sport. The development of best practices and prevention strategies for S.A.'s transition out of sport can include a handful of strategies for all sport types.

Once an athlete reaches collegiate sport, they spend approximately 70 hours per week on studies and athletics (NCAA, 2016). Yet most will not or cannot continue on to professional sport (Brown, 2003). This means that most S.A. will transition out of sport following their collegiate eligibility (Hansen, Perry, Ross, & Montgomery, 2019). The purpose of this section is to define sport transitions within the current literature, determine relevant predictors of transitions, outline models of sport transitions, and determine best practices for successful transitions.

Transition Defined

Transitions are an integral part of the human existence. While it is not hard for individuals to summon memories of their own past transitions, for the purpose of this discussion an operational definition is needed. A life transition can, therefore be described as, "…an event or non-event result[ing] in a change in assumptions about oneself and the world and thus require[ing] a corresponding change in one's behavior and relationships," (Schlossberg, 1981, p. 3).

This definition by Schlossberg sounds straightforward, yet it is surprisingly informative. First, a transition does not need to be an event. When we consider a life transition, events often come to mind; sometimes these events are big and showy (e.g., marriage, the birth of a child, an accident, etc.), while others are subtler (e.g., finishing a project at work and moving onto the next one). Yet using this definition, a transition need not be restricted to an event per se. Transitions such as the transition from adulthood into old age typically occurs over many years, with subtle changes in mobility and energy as the years pass. While typically no one event ushers us into old age, the transition is clear.

The second revelation in this definition regards our assumptions. Due to transitions in life, we must adjust not only how we see ourselves, but also how we see the world. The transition into old age, for instance, typically results in decreased mobility and energy. When considering participation in an event, the individual who has transitioned into old age must not make a decision based on the mobility and energy they had at the age of 30. Their assumptions about what they can physically do must adapt, else they experience disappointment. Transitions also affect world view. As our roles within society change, so does our engagement with the world around us. Consider interactions with a 25-year-old individual and a 75-year-old

individual. Regardless of the reason (e.g., ageism, increased respect, difficulty hearing or understanding), interactions with these two individuals will vary greatly because society views them differently. The main question is this, "where do I fit in the world after this transition?".

The final portion of this definition describes the reactions to the transition. Transitions, according to Schlossberg, require changes in behavior and relationships. A transition into older adulthood is accompanied by physical changes, as discussed. Therefore, if it is clear that this transition has occurred and the individual has realized that their mobility and energy have decreased, then their behavior will likely reflect this fact (e.g., hailing a cab instead of walking). Relationships with others are also affected by, for instance, what we can physically do. If a relationship with friends was based on a mutual love of playing basketball, there may come a time during older adulthood where a two-hour pick-up basketball game is not possible. Will this relationship end or continue with different activities? Either way, the relationship is altered.

In sport, as in life, transitions are inevitable. Transition out of sport, sometimes referred to as retirement, is defined as the, "…process of transition from participation in competitive sport to other activities and relationships," (Coakley, 1983, p. 1). This definition is more simplistic than Schlossberg's, yet still includes a significant assumption: that the time, energy, and resources previously spent on sport will be directed towards another activity. This is an important distinction as we tend to think about transition out of sport as the closing of a door, not also the opening of another. Here, just as in Schlossberg's definition, we see the inclusion of relationships with others. As an athlete leaves sport, it is expected that their relationships will also be affected. Especially for elite athletes who spend much of their time engaged in practice and competition, this leaves little time for the development of other relationships.

Life Transition Research

Major life transitions and their consequences have been studied in various fields, most notably sociology, anthropology, and psychology. The study of life transitions developed out of two major theories: Role Theory and Social Stress Theory. Role Theory was developed by Linton in 1936 in his book *The Study of Man*. This theory, albeit abstractly, set the stage for our basic understanding of status, roles, and role allocation. Roles are central to transitions as it is by moving into and out of a role that one experiences a transition (Allen & van de Vliert, 1984). Linton (1936) also discusses the timing of transitions (usually predictable/normative) and requirements for successful transitions (a specific skill set for new roles).

While Role Theory largely ignores social context, Social Stress Theory describes stress in terms of social location. This theoretical framework developed from epidemiological work that concluded that those who hold a minority status within society experience greater stress, resulting in higher rates of illness (Kessler, 1979). Here, a stress was operationalized as a life transition (e.g., divorce, changing careers, becoming a parent, etc.) (George, 1993). As Social Stress Theory developed, research began to focus less on the "event" of stress and more on identifying factors that lead to the perception of the event (George, 1989).

In addition to Role Theory and Social Stress Theory the sociological power of an individual must be considered when discussing the effects of transitions. Sociological power, as defined by Emerson (1962) is, "…the amount of resistance that can be overcome," (p. 31) by an individual. This definition assumes that one individual or group depend on the other for an important good or service. Therefore, in order to understand the transition, we must ask, "How much power does this individual have over their life?" and "Who holds the power in their life?".

Using these theoretical constructs, we can understand the process of transitioning from

one role to another role throughout life. Role Theory provides us with pertinent questions regarding the timing of transitions and the skill set(s) held by the individual that may translate to another role. Social Stress Theory delves deeper into our understanding of the transitions and how they affect us psychologically based on our social position. A discussion of transition should focus on the perception of the transition, not the "objective" facts, as perception drives behavior. Finally, a clear understanding of the individual's sociological power in crucial to predicting and providing assistance through transition out of sport.

Transitioning out of a Role: Retirement as Analog

To examine transition out of sport, can we compare athletic transition to workforce transition? While occupational retirement is generally regarded as positive (i.e., leaving stressful jobs for a life of leisure), it can also be difficult, disempowering, and isolating (Kim & Moen, 2002). The jury is still out, in a sense, regarding whether retirement is generally neutral, positive, or negative. Some research has concluded that workforce retirement has little effect on social adjustment and personal identity, and that most retirees cope well with this transition (Atchley, 1982; Gall, Evans, & Howard, 1997; George, 1993; Palmore & Fillenbaum, 1984; Stull, 1988). Further research has found that retirement has a positive effect on both mental and physical health (Midanik, Soghikian, Ransom, & Tekawa, 1995). Yet still other research has determined retirement to have a negative effect on life satisfaction and morale (Elwell & Maltbie-Crannell, 1981; Walker, Kimmel, & Price, 1981).

A brief overview of workforce retirement literature, therefore provides us with a basic theme: there is no singular conclusion. The experience of transitions is quite varied. Conclusions are also difficult, as this research is dated. Much of the investigation into workplace/occupational retirement was conducted in the 1980s and 90s. After these dates, it was generally established

that the domain had reached saturation. While several decades old, it is still important to connect retirement and transition out of sport. Not only do we use the same nomenclature (i.e., athletes retiring from sport), retirement is perhaps the most studied analog to transitioning out of sport.

The Role of Sport in Socialization

In order to understand the role sport plays in the lives of elite athletes, we must look back to the individual's socialization through and into sport. For the elite athlete, sport involvement takes up much of their time, energy, and resources. Often, most interpersonal interactions occur while practicing, competing, or discussing sport. Given this highly salient athletic identity, transition out of sport has the potential to be earth shattering.

Sports are a microcosm of society through which any observer can, "…examine values, socialization, stratification, and bureaucracy," (Eitzen, 2015, p. 12). Looking through the lens of sport, we can see any culture's ideology, or the, "shared framework that people use to make sense and evaluate themselves, others, and events in their social world," (Coakley, 2015, p. 14). Sport, like all social constructs, is used to produce and reproduce hegemony and aid in the socialization of children.

Sport involvement, and the subsequent socialization through sport, often begins early in childhood (Bloom, 1985; Côté, 1999; Howard & Madrigal, 1990; Stevenson, 1990). Gender provides an accessible example for socialization through sport. Parents and communities introduce children to sports in a gendered way, dictating specific sports depending on biological sex (e.g., football for boys, volleyball for girls). Acceptable behavior within these sports is also gendered. Boys as "natural athletes" are told to experience their bodies as powerful, space occupying, and meant to physically dominate their competition (Coakley, 2016). Alternatively, girls as "unnatural athletes" must maintain their femininity at all costs, even if this means that

they are not as successful athletically. For female athletes, the focus remains on, "…physical appearance, femininity, and heterosexuality," (Fink, 2015, p. 331).

All children are socialized through their culture. Sport both creates and recreates the hegemonic culture. The role of identity (e.g., gender, sex, ethnicity, etc.) in the lives of children, adolescents, and ultimately adults is played out in sport. Problematic culture within elite sport (e.g., toxic masculinity, image consultants, or LGBT erasure) stems from this early socialization.

Given how much of an individual's identity is shaped through sport participation, it is not difficult to see that transitioning out of the athlete role may cause distress. Interpersonal relationships, such as that between a parent and child or peer to peer may revolve around sport. Furthermore, athletes may view their teammates and coaches as their primary social support system. In the next section, specific effects of transitioning out of sport will be discussed.

The Effects of Transitioning Out of Sport

As in workforce retirement, there is no definitive conclusion regarding transition out of sport. Typically, the research indicates that the transition is more negative than positive, yet not in all situations. Generally, the main question asked in this research is: what is the experience of athletes transitioning out of sport?

Leaving sport has been found to be a significant stressor for athletes. This transition correlates with increased rates of anxiety, depression, and coping difficulties. This is especially true for those with salient athletic identities (Grove, Lavallee, & Gordon, 1997; Wippert & Wippert, 2008, 2010). Highly identified athletes may experience what Coakley (1983) describes a "social death." Psychological study tends to focus on the negative such as, "…the rigidity of sport organization, the existence of exploitation, and the threats to athletes' autonomy and personal well-being," just to name a few (Coakley, 1983, p. 2). Many studies dating back to the

1970s and 1980s indicate that retirement from sport is a major problem for athletes due to identity foreclosure, impact on social relationships, feelings of loss, and distress (Ball, 1976; Harris & Eitzen, 1978; Hill & Lowe, 1974; Rosenberg, 1981).

For many athletes, success in sports causes them to spend more time on sport pursuits (e.g., practicing, competitions, traveling, etc.) and less time on other activities. This can result in identity foreclosure, or a premature commitment to a specific identity, consequently removing other identity options without exploration (Marcia, 1966; Petitpas, 1978). By exclusively developing an athletic identity, athletes are less likely to develop career and decision-making skills (Murphy, Peititpas, & Brewer, 1996).

Social relationships are a huge factor in sport participation. Particularly for those who remain in a sport over long periods of time, athletes and parents develop close bonds with teammates and coaches. In a 2006 study of youth soccer players, Ullrich-French and Smith found that close social bonds predicted higher enjoyment and competence. Yet for those who leave sport, these social bonds often suffer, or even lead to social isolation.

If sports are indeed exploitative to athletes, it would be logical to assume that athletes might welcome the transition out of sport. Some researchers support this hypothesis. In a 2016 review of transition out of sport, Knights, Sherry, and Ruddock-Hudson challenged the accepted view that transition out of sport is inherently negative. They instead focused on athletes who flourish by orienting towards life in a psychologically positive way) while transitioning out of sport. This focus on successful transitions could lead to a reduction in many of the negative consequences of transitioning out of sport.

Predictors of Transition

There are several factors that may predict successful transition out of sport. In a review of

35 independent studies of transition out of sport, Park, Lavallee, and Tod (2012) identified 15 variables related to the quality of transition out of sport: athletic identity, demographical issues, voluntariness of retirement decision, injuries/health problems, career/personal development, sport career achievement, educational status, financial status, self-perception, control of life, disengagement/drop-out, time passed after retirement, relationship with coach, life changes, and balance of life. In this document, I will review only those factors pertinent to a discussion of preventative evaluation: athletic identity, voluntariness of retirement decision, vocational and life skills, ethnic identity, self-perception, control of life, and life balance.

Athletic Identity

One of the largest predictors of transition success is athletic identity**.** Athletic identity is a multidimensional construct of self-concept, encompassing the cognitive, emotional, and behavioral consequences. It is operationalized as the degree to which an individual identifies as an athlete (Brewer, Van Raalte, & Linder, 1993). Those with a stronger athletic identity are more likely to have a higher level of commitment and athletic performance (Horton & Mack, 2000). Yet stronger athletic identity is also positively associated with neglect of other aspects of one's life, and an increased risk of psychological distress following transition out of sport (Webb, Nasco, Riley, & Headrick, 1998). Generally, the more central the athletic identity, the more difficult the transition. In a longitudinal study of collegiate athletes transition out of sport, "Decreasing the prominence of their athletic identities precluded a major identity crisis or confusion upon and following athletic retirement," (Lally, 2007, p. 85). The author recommends a "redefinition of the self" before exit from the sport to reduce the chance of negative reactions. This recommendation was expanded to include an extended period of time to adjust to life elite sport (Grove, Lavallee, & Gordon, 1997; Warriner & Lavallee, 2008).

Voluntariness of Retirement Decision

Within the literature, transitions are most commonly described as normative or non-normative. While some transitions out of sport are abrupt (i.e., non-normative), others are pre-planned and anticipated (i.e., normative) (Schlossberg, 1984; Wylleman, Alfermann, & Lavallee, 2004). These non-normative transitions can be the result of an injury, loss of position, or other event outside of the control of the athlete. Normative transitions typically result from the "aging-out process" (e.g., graduating from high school or college, planned retirement, etc.).

The most common non-normative transition is due to injury. Injuries and health issues have been found to not only increase the stress of the transition, but also to increase the amount of time necessary to transition successfully (Kadlcik & Flemr, 2008; Muscat, 2010; Wertherner & Orlick, 1986). Furthermore non-normative transitions have been found to be more psychologically distressing compared to expected, normative transitions. These distinctions are important as the reason for leaving sport has been found to be one of the most influential factors for the success of career transition (Taylor & Ogilvie, 1994).

For the purposes of the current study, transition type will be important in predicting the success of the transition and the proposed methods provide support to athletes. For those athletes who have non-normative transitions out of sport, more intense support will be needed as these transitions are typically cause an increased level of stress. For normative transitions, methods for aiding in this transition will not be limited to emphasis on future careers (the most common current strategy). So that former athletes will be more successful in the career transition, our strategy will be focused on validation of the distress in leaving sport. While, generally normative transitions are less stressful than non-normative transitions, the, "…distinction between voluntary and involuntary retirement is unclear and that athletes who retire of their own volition

are not necessarily exempt from adjustment difficulties," (Kerr & Dacyshyn, 2000, p. 126).

Vocational and Life Skills

Involvement in collegiate sport does not allow much time to develop skills outside of the sport domain. Yet, for most athletes, their sport careers have a relatively short lifespan. Therefore, efforts focused on transition out of sport and into the workforce are extremely important. In several studies of elite athletes, it was found that occupational status was positively associated with the quality of transition out of sport (Conzelmann & Nagel, 2003; Koukouris, 1994). Conzelmann and Nagel (2003) surveyed 616 former elite athletes and found that they had higher levels of education and professional positions compared to the general population. Athletes surveyed indicated the social connections and transferable skills developed during athletics did had a positive effect on future career, especially when developed earlier. Another study analyzed 34 interviews of elite athletes and discovered that, "Former athletes identified the problem of settling into a job and financial constraints as the primary factors influencing their disengagement from sport," (Koukouris, 1994, p. 114).

While the debate is ongoing regarding life skills gained from sport involvement, those athletes who developed vocational and life skills experienced a smoother transition out of sport (Park, Lavallee, & Tod, 2012). The opposite was true of athletes who did not develop these crucial life skills, and instead they experienced identity foreclosure. According to Muscat (2010), delayed identify shifts been the athlete identity and the career identity resulted in difficulties in the workforce. Several qualitative data analyses show that the lack of personal development because of heavy sport involvement led these athletes to perceive that their life choices were limited (Chow, 2001; Stronach & Adair, 2010). Athletes were somewhat inoculated by career planning, as is common practice in many athletic departments (Lantz, 1995). Yet these efforts

often occur only during junior and senior years, later than most recommendations.

Athletics has been found to foster specific skills that may translate to life after sport, (e.g., dedication, cooperation, communication skills, etc.) there are also skills that go un- or underdeveloped. Several researchers have determined the development of a skill set specifically for future occupations is important (Chow, 2001; Lantz, 1995; Muscat, 2010; Stronach & Adair, 2010; Swain, 1991). Recommendations for the skill building include an extended timeframe, to begin two, three, or four years before transitioning out of sport. Thus, for the purposes of this study, this skill development should occur as early as freshman year.

Racial and Ethnic Identity

Another demographic factor for transitions discussed in the literature is racial and ethnic identity. The effect of race and ethnicity on successful transition out of sport is not conclusive. According to two studies of transitional differences between European American S.A.s and African American S.A.s showed opposite directions. Lewis (1997) in a published dissertation found that European American athletes had a greater level of difficulty during transitions, while Perna, Zaichkowsky, and Bocknek (1996) found that African American athletes had more difficulty during transitions. Other racial/ethnic identities have not been examined with regards to transition out of sport. Even for the two studies reviewed here, race/ethnicity was not the main factor examined; it was just a demographic item. It is important to understand that the experience of individuals with various racial/ethnic backgrounds will surely be affected by these identities, but the nature of these effects is unknown. Therefore, for the purposes of this evaluation, race/ethnicity will be recorded, but will only be a focus of the evaluation if the individual indicates this as a central aspect of their transition process.

Self-Perception

Exiting sport can cause negative body image to develop or worsen (Kerr & Dacyshyn, 2000; Lavallee & Robinson, 2007; Stephan, Bilard, Ninot, & Delignières, 2003; Stephan, Torregrosa, & Sanchez, 2007). For virtually all athletes, leaving the competition field means a different relationship with their bodies, physical activity, and even food. Athletes may feel a loss of control over their bodies, leading to distress or even an identity crisis for those who, "…shaped their life narrative exclusively around the body's performance in sport," (Sparkes, 1998, p. 363). These changes look different for different people (i.e., some gain weight, some lose weight, some experience weakening in specific muscle groups, etc.). Yet any change can result in disruptions to body image.

Self-worth, often defined within psychology as self-esteem, was originally defined by Rosenberg (1965) as the attitude towards the self. A more contemporary definition describes self-esteem as, "…an individual's sense of his or her value or worth, or the extent to which a person values, approves of, appreciates, prizes, or likes him or herself," (Robinson, Shaver, & Wrightsman, 2013, p. 116). It has widely been found that for those who hold a salient identity (e.g., athlete, student, parent, etc.), self-esteem is higher than those who do not. Yet the obvious issue here is that during a transition, this identity is in flux. In a 1988 article on the athletic retirement process, Thomas and Ermler wrote, "When one's self-worth is contingent on success in a particular sport, such narrowness creates a vulnerability that is inevitable with declines in and/or termination of one's performance." This vulnerability can lead to distress for the athlete.

Control of Life

Autonomy, as described by Deci and Ryan (1985) is the amount of control an individual has over their life. If the person is autonomous, they are the "master of their own destiny,"

meaning that they are in control of the choices they make and are thus responsible for the outcomes. Autonomy exists on a continuum and is mainly about perception. An individual who feels that they have a great amount of autonomy, even if they have very little, will experience the positive psychological benefits. In the same way, an individual who objectively has much control over their life but feels they have very little will suffer psychologically. Generally speaking, people need to feel autonomous in most aspects of life in order to function optimally (Deci & Ryan, 1985). During transition out of sport, athletes who experienced lower perceived levels of autonomy during their playing days had more difficulties compared to those who had higher perceived levels of autonomy (Kerr & Dacyshyn, 2000). For those who experienced non-normative transition out sport, this imbalance was even greater as their reason for exiting sport was out of their control.

Life Balance

Within the sport retirement literature, the concept of balancing sport and life is often mentioned. Perhaps Adams, Coffee, and Lavallee said it best in their 2015 paper on social support: "Balancing a sporting career with other aspects of their lives can make athletes more vulnerable to transition difficulties" (p. 37). Yet regardless of how much this concept resonates anecdotally, it is not the focus of research in the sporting domain. Therefore, we must then turn to the organizational concept of work-life balance for a suitable analog.

Work-life balance has been studied in industrial and organizational psychology for decades. The main definition of work-life balance used today, includes four main factors: 1) role engagement in work and non-work life, 2) minimal conflict between these two main roles, 3) equal time and involvement for each role, and 4) overall life satisfaction (Sirgy & Lee, 2018). This conceptualization is based on the work of several researchers including Clark (2000),

Greenhaus et al. (2003), Kirchmeyer (2002), Marks (1977), Marks and MacDermid (1996), and Sieber (1974).

Models and Programs of Transition Out of Sport

Human Adaptation to Transition Model

Nancy Schlossberg has dedicated her career to aiding adults through life transitions (Schlossberg, 2014). While there are commonalities in all transitional phases, we must also recognize idiosyncratic differences in adaptations. To help researchers guide life transitions questions, Schlossberg wrote in her 1981 paper:

> But what exactly accounts for such differences between individuals and within the same person at different times in life? What determines whether a person grows or deteriorates as the result of a transition? Why do some people adapt with relative ease while others suffer severe strain? (p.3)

These questions set the stage for understanding three main factors related to the adaptation of transition: perception of transition, characteristics of environment (both pre- and post-transition), and characteristics of the individual (Schlossberg, 1984). These factors lead to an adaptation to transition.

Perception of a specific transition is how an individual cognitively and affectively reacts to this change. Some factors within this model include role change (gain vs. loss), affective/emotional state, source of the transition (internal or external), timing of transition, onset (gradual vs. sudden), and duration of transition (permanent, temporary, or uncertain). These factors are combined to inform the unique degree of stress an individual experiences during a transition.

Characteristics of pre-and post-transition environments set the stage for the effectiveness

and overall ease of the transition. Social support is a key component and includes personal (intimate, familial, and friendships) and institutional (co-workers/peers, administration, etc.) relationships. Lastly, the physical setting affects the overall transition – for instance, will an individual leave the setting following transition or stay?

Individual and personality characteristics are the final piece of the adaptation to transitions. Demographic information such as sex, age, health status, ethnicity, and socioeconomic status give us clues to how an individual will react to a transition. Other, more difficult to quantify factors such as psychosocial competence, value orientation, and previous transition experience provide a detailed account of an individual's likelihood for adaptations to transitions.

Finally, in order to understand how to achieve a successful transition, we must define adaptation to transition. According to Schlossberg (1981), adaptation to transition is a process, rather than a finite point. During this process, the individual moves through two main phases: pervasiveness and reorganization. Pervasiveness is the complete cognitive preoccupation with the transition. Reorganization is the eventual integration of the transition into daily life. The adaption depends on 1) balance of resources and deficits and 2) perception, environment, and individual characteristics.

Using this model, we can answer the following important questions regarding a transition. How will this transition change the individual's day-to-day life? How does the individual perceive the transition? Not including the self, what does the transition impact (i.e., relationships, routines, assumptions, and role identity)? This model was one of the firsts to outline the transition process. While not sport specific, it can guide the current research. Any examination of transition should include the three main factors outlined by Schlossberg:

perception of transition, characteristics of environment, and personal characteristics.

Conceptual Model of Transition Out of Sport

Taylor and Ogilvie's (1994) Conceptual Model of Adaptation to Career Transition is one of the most commonly cited models of transition out of sport. This model is composed of four main sections: the reason(s) or cause(s) of athletic retirement, factors related in adaptation to retirement, available coping resources, and the quality of adaptation to athletic retirement. The first component answers the questions: why did the athlete leave sport? There are four main reasons or causes, and more than one may apply to each individual: age, de-selection, injury, and free choice. Factors related to the adaptation to retirement include several of the predictors of transition reviewed in this research: developmental experiences, self-identity, perceptions of control, social identity, and tertiary contributors. The final piece we need when evaluating the quality of transition out of sport is available resources: coping skills, social support, and pre-retirement planning. Using the components, we get a substantial outline the S.A. and can therefore predict the quality of transition.

The quality of adaptation to athletic retirement has two main categories: retirement crisis (and subsequent interventions) and healthy career transition. Of course our goal will always be for our S.A.s to experience a healthy transition out of sport, but we must be aware of the signs and symptoms of crisis. The symptoms of retirement crisis listed in this model include: psychopathology, substance abuse, occupational problems, and family/social problems. These are vast categories but nonetheless helpful. If it becomes clear that the individual is in retirement crisis, interventions are recommended. The authors define four main types of intervention (cognitive, emotional, behavioral, and social) but note that the most effective interventions are both personalized and often involve multiple, if not all, types of intervention (Taylor & Ogilvie,

1994; 2001).

Life After Sports

In a 2004 study of NCAA Division II S.A.s, Harrison and Lawrence collected both quantitative and qualitative data from 143 men and women. Their goals were to understand the perception of transition out of sport from the S.A. perspective. This study required participants to complete the "Life After Sports Scale" (LASS) developed by Harrison and Lawrence (2002), and read a case study of a S.A. who successfully transitioned out of sport. The participants were then asked to react to the case study and relate it to their own experiences. Using thematic analysis, the researchers discovered three main themes in the participants' responses to the case study: career path well planned, balancing academics and athletics, and positive role models. For the theme of career path well planned, S.A.s acknowledged the importance of finding a career path that suited their personality and individual interests. Participants reflected on the significance of working hard not only on athletics, but also in the classroom in the theme of balancing academics and athletics. Finally, most participants saw the case study profile as a positive role model and thus reacted with feelings of inspiration. For example, one participant wrote:

> I think this profile is a great inspiration to student athletes because not only was this man a great football player, but he was also a great student. Many athletes, especially football players, don't take their academics seriously, but he takes both of them seriously and wants to be the best of his life, in all aspects (Harrison & Lawrence, 2004).

Using the results of this study, we can focus our evaluation and recommendations on these factors: finding a career that aligns with interests and abilities, balancing academics and athletics, and incorporating positive role models into the structure of the athletic administration. Additional factors provided in the best-practices deliverables will be based on the results of our

assessment.

Mental Health Screening for Athletes

To inform, assess, and recommend strategies for S.A. psychological well-being, Tomalski, Clevinger, Albert, Jackson, Wartalowicz, and Petrie (2019) developed a screening process. Athletes at a mid-major, Division I university were assessed for this study. At this particular university, sport psychology doctoral students were Sport Psychology Consultants (SPC) and worked closely with the sport medicine team under the supervision of the Director of Sport Psychology. Using an embedded approach, SPC were assigned to each team and communicated regularly with the coaches. For eight to ten hours per week for three years, SPC's worked with each team to develop and deliver individualized psychological services. Yearly, the program was evaluated by the DSP and the head coaches. In conjunction with the SPC, the Sport Management Team (SMT), also led by the DSP, met twice per month to identify S.A. who were considered at risk in order to mobilize services to help.

The screening tool used was developed using select items from the NCAA and National Athletic Training Association (NATA) best practice documents (NCAA Sport Science Institute, 2016). Originally containing 26 items, eight items were found to have poor predictive validity or were very similar to other items. Thus, the survey was reduced to 18 total items used to screen S.A. in four domains: 1) mind (i.e., depression, anxiety, and suicidal ideation), 2) body (i.e., sleep, body image, and substance use) 3) sport performance and 4) health status (i.e., previous diagnoses and counseling). This screening tool was a part of the overall health and well-being S.A. assessment process. Individual screener data was not shared with coaches.

Follow-up for the mental health screener triaged athletes into five categories: 1) endorsed harm to self or others 2) mental health concerns 3) substance use concerns 4) performance

concerns, and 5) no present concerns. Those in the first category were immediately (within 24 hours) referred to care and treatment. The other three concern categories were scheduled for follow-up interviews within 72 hours for the following three weeks. These interviews lasted 15-30 minutes. Based on the results of the interviews, S.A. were referred to SPC embedded in their own team, other SPC, or campus counseling services.

This program is quite comprehensive and includes several helpful recommendations for future S.A. psychological well-being program development. One of the driving forces to this program, as stated in the reflections section of this study, was the existing relationship between the athletic administration and the sport psychology department of this university. While this type of relationship is ideal, it is not always possible or available. For the present research, deliverables will be designed to be used by existing (non-sport psychologist) personnel.

S.A. Workshop

The most recent program for facilitating successful transitions out of sport for intercollegiate athletics was completed by Hansen, Perry, Ross, and Montgomery in 2019. This program employed Schlossberg's (1984) model, but was adapted to target specific strategies. The program had four main stages: psycho-education, facilitating healthy adjustment, processing the loss of sport, and identification of additional resources.

In the psycho-education phase, participants were first assessed for maladjustment. Signs (e.g., emotional distress) and possible causes of maladjustment (e.g., injury) were determined. The authors recommended that athletes then engage in discussion on these topics but did not provide details.

To facilitate healthy adjustment, the program had two main parts: cognitive behavioral therapeutic (CBT) techniques and reflective exercises. Using aspects of CBT, S.A. were aided in

examining thought processes, emotional states, behavioral reactions, and social support systems. During the reflective exercise phase, S.A. were guided through value-based goal setting and recognizing multifaceted identity.

In the third phase, athletes reflected on their sport career in order to process the loss of sport. This reflection was done first individually, then in small groups, and finally in a large group. Questions asked during this phase included: What have you learned from sport? What are you proud of? The program ended with identification of additional resources such as the university counseling center.

While this workshop structure is very helpful for future research on the topic of S.A. transition out sport, there were several issues that I will address in the current project. A prevalent issue in athletes' transition out of sport is the timing of aid. Consistent with this program, transitions are not typically discussed until the final year or even final semester of athletic eligibility. Based on a thorough examination of the literature, this is simply too late for many S.A. One other issue with this workshop was the low sample size, as it included only eight participants. While only a pilot study, eight S.A. does not give us enough information to gage the effectiveness of this model.

Conclusion

Though the majority of collegiate athletes transition out of sport after their university playing days are over, there is a conspicuous lack of evidence-based programs to address this issue (Hansen, Perry, Ross, & Montgomery, 2019; Leonard & Schimmel, 2016). Through this research, my goal is to not only assess, but also help prevent adverse reactions and address existing issues through best practices and recommendations. These best practices are based on the existing life-transition research, retirement, predictors of sport transitions, and sport transition

models and programs.

Research Questions

This study is mainly exploratory in nature, as no previous research has collected data on burnout, depression, and transition readiness on this population. The two main goals for this study: to get a general understanding of the psychological well-being based on the three factors reported in this literature review and to provide recommendations to the athletic administrators and coaches based on these data. The main research question in the current study is how are students scoring on the three assessments (ABQ, BDI, and BALANCE) as a way to measure burnout, depression, and transition readiness? Secondary research questions include: are there associations between the three measurements, and can scores on the three measurements be predicted using demographic variables?

All data will be reported in aggregate form to coaches and administrators (given that a nominal threshold required for an 80% confidence interval and 10% margin of error is reached) so that strengths and weaknesses can be established. Areas of concern will include recommendations from the researcher based on existing literature.

The main statistical approach within this study will be descriptive, including frequencies and percentages. Correlations will also be used as an associational method to evaluate the relationship between demographic variables and burnout, depression, and transition readiness. Finally, multiple regression will be used to determine whether there is a combination of demographic variables (sex, gender, age, ethnicity, student status, mother's highest level of education, and post-college plan) that can predict level of burnout, level of depression, and transition readiness.

Hypothesis 1: Scores on the BDI will be positively associated with scores on the ABQ.

Hypothesis 2: Scores on the BDI will be positively associated with scores on the BALANCE.

Hypothesis 3: Scores on the ABQ will be positively associated with scores on the BALANCE.

Hypothesis 4: A combination of demographic variables will predict scores on the BDI.

Hypothesis 5: A combination of demographic variables will predict scores on the ABQ.

Hypothesis 6: A combination of demographic variables will predict scores on the BALANCE.

CHAPTER 3

METHODS

Participants

Participants in this research will include elite-level, non-professional student-athletes (S.A.) at a mid-major, Midwestern university. Mid-major, as designated by the NCAA, refers to all Division I collegiate athletic conferences outside the "Power 5 Conferences." The Power 5 includes: Atlantic Coast Conference (ACC), Southeastern Conference (SEC), Big 12, Pacific (PAC) 12, and Big 10.

All current S.A. at a mid-major, Midwestern university will be recruited for participation in this research. This includes both male and female athletes in basketball, cross country, track and field, swimming and diving, and golf. Men's sports represented in this research include baseball and football. Women's sports represented include soccer, softball, and volleyball.

Participants will be from various countries, with the majority from the U.S. All participants will be 18 years of age or older. Participation in this research will be voluntary and the S.A. will not be paid. The required sample size required for this study is greater than 50 participants to test for relationships (descriptives, correlations, and regressions; Van Voorhis & Morgan, 2007). According to Green (1991), $N > 104 + m$ for testing individual predictors, assuming a medium-sized relationship. For the current study with five predictors, the required minimum sample size is 109 participants.

Measures and Materials

Consent Form

An approved human subjects committee informed consent was used for all participants. This document will include information pertaining to procedures, benefits and risks of

participation, dissemination of results, voluntary participation, and researcher contact information (see Appendix A). If participants have any questions, comments, or concerns about the research a document with detailed information about the study was provided.

Athletic Burnout Questionnaire (ABQ)

The most recent version of the ABQ has 15 items and three subscales: reduced accomplishment (RA), exhaustion (E), and sport devaluation (D). Each subscale has five items. The stem for each item is "How often do you feel this way?" An example of a reduced accomplishment item is "I'm not accomplishing many worthwhile things in [specific sport]." An example of an exhaustion item is "I feel so tired from my training that I have trouble finding energy to do other things." An example of a sport devaluation item is "The effort I spend in [specific sport] would be better spent doing other things." Participants can then respond using a five-point, fully anchored Likert scale with "almost never" (1), "rarely" (2), "sometimes" (3), "frequently" (4), and "almost always" (5). Two items are reverse scored.

Scores for the ABQ are reported by totals for each subscale. Each subscale (reduced accomplishment, exhaustion, and sport devaluation) has five items. These scores can be considered separately or aggregated to form a single, total score. The scores are inherently continuous, but can be dichotomized into not at risk, low, moderate, and severe.

Both convergent and discriminant validity of the subscales within the ABQ have been found to be within acceptable parameters (Cresswell & Eklund, 2006; Raedeke & Smith, 2001) In order to determine the validity of the 15-item ABQ, confirmatory factor analysis was conducted (Raedeke & Smith, 2001). A three-factor model demonstrated the best fit for the data in both senior age group swimmers (ages 14 – 19) and collegiate athletes of various sports. Interfactor correlations were considered moderately large ranging from .52 to .71. Cresswell and

Eklund (2006) also demonstrated both validity and reliability for athletes outside of North America. Due to the reliability issues of the EABI, caution should be used because the ABQ and EABI do share a substantial proportion of items (Cresswell & Eklund, 2006).

Beck Depression Inventory

The Beck Depression Inventory (BDI) is a widely used instrument to measure depression in adolescents and adults (Dozois, Dobson, & Ahnberg, 1998). In a 1988 review of the BDI by Beck, Steer and Garbin, measures of internal consistency resulted in an average coefficient alpha of .81 for non-psychiatric populations.

A second version of the BDI was published in 1996 and included a few changes to reflect the evolution of depressive symptoms in the Diagnostic and Statistical Manual (DSM). In the new version, four items were replaced completely and the response choices for 14 items were revised. The current study will utilize the updated version of the inventory. Estimates of internal consistency for the BDI-II in a non-clinical adolescent sample were high, with a coefficient alpha of .92 (Osman, Barrios, Gutierrez, Williams, & Bailey, 2008). It is significant to note that the average (mean) score of this adolescent population (N = 414) was 12.5 with a standard deviation of 10.5 out of 63 total points.

There are 21 total items that correspond with levels of depression. These levels range from normal "ups and downs" to extreme depression. Nineteen out of the 21 items contains four answer choices from which the participant chooses. The first item on the questionnaire requires participants to indicate their level of sadness, with the following four options: I do not feel sad (0), I feel sad much of the time (1), I am sad all the time (2), and I am so sad and unhappy that I can't stand it (3). The participant would choose the statement that best articulates their current state. The other two items, regarding sleep patterns and appetite, have seven total choices that

correspond with specific behaviors. For example, changes in sleep patterns are designated as: I have not experienced any change in my sleeping (0), I sleep somewhat more than usual (1a), I sleep somewhat less than usual (1b), I sleep a lot more than usual (2a), I sleep a lot less than usual (2b), I sleep most of the day (3a), and I wake up 1-2 hours early and can't get back to sleep (3b). The answer choices reflect the dichotomization of irregular sleeping patters – sleeping too little or too much. The number corresponding to each statement is used to calculate the total score. From the 21 total questions, the highest possible score is 63 and the lowest possible score is zero.

The scoring is as follows: 1-13 is considered minimal depression, 14-19 corresponds with mild depression, 20-28 corresponds with moderate depression, and 29-63 corresponds with severe depression. The Beck Depression Inventory II can be self-scoring, with the participants totaling up the scores upon completion. For this project, totals will be calculated automatically and reported for each participant.

British Athletes Lifestyle Assessment Needs in Career and Education (BALANCE)

The BALANCE Scale (Lavallee & Wylleman, 1999) was developed to assess adaptation to transition. This scale includes 12 factors shown to be predictive of moderate levels of adaptation to transition out of sport: control of transition out of sport (Lavallee, Grove, & Gordon, 1997); athletic identity (Grove, Lavallee & Gordon, 1997); social support (Webb, Nasco, Riley, & Headrick, 1998); previous transition experience (Swain, 1991); sport involvement post-transition (Curtis & Ennis, 1988); degree of occupational planning (Grove et al., 1997); identity foreclosure (Murphy, Petitpas, & Brewer, 1996); socioeconomic status (Kleiber, Greendorfer, Blinde, & Sandall, 1987); transferable skills (Sinclair & Orlick, 1993); sport goal achievement (Sinclair & Orlick, 1993); access to career support services (Gorely,

Lavallee, Bruce, Teale, & Lavallee, 2001); multifaceted identity (Baillie & Danish, 1992).

Each item has a seven-point Likert-type scale ranging from strongly agree (1) to strongly disagree (7). Total score on the assessment is summation of all items (12-84). Lower scores indicate an individual who is a low risk for difficult transition out of sport, and higher scores correspond to an at-risk individual. Several U.S. studies have used this scale with comparable results to British athletes. Scores greater than 65 have been found to accurately predict significant difficulty in transition out of sport (Lavallee & Wylleman, 1999; Lavallee, Golby & Lavallee, 2002). Lavallee (2005) yielded a Cronbach alpha coefficient of .91, indicating that the BALANCE has excellent internal consistency.

Demographic Questionnaire

The demographic questionnaire will consist of seven items, including sex, gender, age, ethnicity, student status (freshman through graduate student), mother's highest level of education, and post-college plan (e.g. unsure, graduate school, professional athletics, etc.).

Qualtrics

The online survey platform Qualtrics will be used to create and administer the survey. All survey measures, including the ABQ, BDI, BALANCE, and demographic questionnarie were uploaded to Qualtrics. All participants received the same survey.

Procedure

Participants were members of a Division I, Midwestern University athletic teams. The researcher met with all head coaches to introduce the study and provide coaches/administrators with a flyer that included information about the study. If coaches were interested, the researcher scheduled a team meeting time. Based on scheduling with the head coaches, teams gathered on various days for data collection. The survey was accessed on smart phones, tablets, or computers

via QR code. All eligible participants were informed of the study and the procedures during the scheduled meeting. Those willing to take part in the study signed a consent form. Participation was voluntary and no penalties occurred for those who do not wish to participate.

Assessment

Assessment is the process of measuring data. Psychological assessment, as defined by the APA online dictionary (2019) is "the gathering and integration of data to evaluate a person's behavior, abilities, and other characteristics, particularly for the purposes of making a diagnosis or treatment recommendation." For this study, there was no true diagnosing, but instead my focus was on prevention and future recommendations. Our assessment simply measured current S.A. on three main factors: burnout, depression, and transition out of sport potential.

Data collection occurred online. Participants completed an online survey available to them via a QR code. Once the link was activated, participants will be routed to Qualtrics, an online survey platform. The first page of the survey displayed a consent form. Once the consent form was accepted, the participant was directed to the next screen with instructions. If the participant did not accept the consent form, they will simply exit the browser window. Participants who gave consent were given a series of questionnaires: BDI, ABQ, BALANCE, and demographic items. The order of the questionnaires was randomized for each participant. The survey took approximately 15 minutes to complete. During the survey, the researcher was available to answer any questions posed by the participants. Participants could stop at any time for any reason without consequence.

Once the survey was complete, participants were debriefed regarding the purpose of the study. The researcher answered any questions posed by the participants at this time. The participants were also told (both in the survey and in person) that if they wanted the results from

their surveys to email the researcher. They were also informed (both in the survey and in person) that their individual data would only be seen by the researcher and the participant. All data disseminated to coaches and administrators will be in aggregate form to protect the confidentiality of the participant. After all questions have been answered, participants were thanked and were free to exit.

Evaluation

Evaluation is the process of analysis and review of an organization. In order to evaluate, a researcher must first assess through various means (e.g., interviews, surveys, etc.). Following an assessment, data analysis will provide information about the state of the organization. Following evaluation, researchers can provide recommendations or even propose intervention strategies. For the current study, the goal is to understand the current state S.A. psychological well-being.

Following the assessment phase, the current program will be evaluated regarding S.A. psychological well-being. The factors measured included burnout, depression, and potential transition out of sport success. Data from each measurement tool (the ABQ, Beck Depression Inventory, and BALANCE) was calculated for each individual as well as aggregated for each team and the entire athletic student body. Data collected from the demographic questionnaire was used only in summary form in order to understand potential trends and correlations (e.g., associations between sex, freshman versus sophomores, and/or injury statuses).

Based on descriptive statistics, a general understanding of psychological well-being was developed. Strengths and weaknesses were determined. For areas of strength, we may ask: why is it working? What elements come together to act as a buffer for potential psychological issues? The same basic questions can be asked for weaknesses. The most important follow-up here is, of course, how can we improve? For some areas, this may be obvious. For instance, if a team

reports extremely high levels of depression but not burnout, we can conclude that our energy needs to be focused on aiding athletes through depression. Best practices such as attending campus counseling services, improving sleep hygiene, and shifting goal orientation away from performance and towards mastery will be suggested for teams in this particular situation.

In addition to best practices, other deliverables provided to each team included lists of services. These services included both those on campus (i.e., counseling services, disability services, academic aid, and international student organizations) and online (e.g., NCAA best practices and other S.A. psychological well-being programs). Finally, a comprehensive report was generated for each team that includes strengths and weaknesses, recommendations, and a data summary.

The more athletes that complete the questionnaire, the more informative the results. In order to generalize for the entire population of S.A. at this university, a random sample of 197 S.A. was required. This allowed for a confidence level of 95% and a margin of error of 5%. Because the goal of this study was primarily for assessment, evaluation, and prevention of S.A. psychological issues in the real world, sample size is not the top concern.

Due to S.A. time constraints, I understand that some athletes and/or teams will be more compliant than others. A report including individuals' strengths and weaknesses based on their scores on the MBI, BDI, and BALANCE will be provided to each coach and athletic administrator. Only teams that have enough individuals complete the assessment to achieve an 80% confidence interval and 10% margin of error will receive an aggregated team report so that this report will be a true representation. For example, 18 out of a 30 person team and 30 out of a 100 person team must complete the assessment to receive a team report.

Individual athletes that request their personal scores on these assessments will be

provided them. These individual reports will only be seen by the researcher and the individual athlete. Along with scores for each assessment, evaluation conclusions will be provided so that the athlete can completely understand what their scores mean. Finally, individual recommendations based on the current literature will be provided in any areas of concern.

CHAPTER 4

RESULTS

Descriptive Statistics

The total number sampled from a mid-western university, S.A. population was 166 participants. Due to attrition during the survey or skipped questions, 8 participants were removed before analysis. Responses removed from the analysis were those who were marked as "unfinished" by the survey platform and had dropped out during the first of the three assessments, meaning that none of their data could be used. Two attention checks were included in the survey, with zero participants failing both (the rule for disqualification). Therefore 158 of sampled participants (i.e., 95.2%) were included in the analysis. Planned analyses can be found in Table 1.

Five teams were sampled in this research including: men's football, men's golf, men's track and field, women's track and field, and women's volleyball. The survey was available for all teams at the university, but some chose not to participate and others were not able to be sampled due to the global pandemic known as COVID-19. Frequencies and percentages are provided below for both the entire/total sample and for each team.

Assessments

The three screening tools used in this research include the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001), Beck Depression Inventory (BDI; Beck, Steer, & Brown, 1996), and the British Athletes Lifestyle Assessment Needs in Career and Education (BALANCE; Lavallee & Wylleman, 1999). These assessments are not clinical diagnostic tools, but instead can indicate areas of concern. Descriptive statistics as well as evaluative breakdowns are provided for each questionnaire.

Athlete Burnout Questionnaire (ABQ)

The ABQ has possible scores ranging from 15 to 75. In this sample, the scores ran the entire gamut with a minimum of 15 and a maximum of 75 being reported. The arithmetic mean was 37.2, with a standard deviation of 11.7. While the data is not precisely normally distributed, the skewness and kurtosis are on the lower end with 0.7 and 0.4 respectively. This indicates that the curve pulls to the right, and has a slightly higher peak (see Table 2).

The scores for the ABQ were dichotomized into four groups: scores of 15-29 were considered low risk, 30-44 mild burnout, 45-59 moderate burnout, and 60-75 severe burnout. These group ranges are based on the global burnout index presented by Raedeke and Smith (2004; 2009). For this sample, 47 of the 158 participants (29.7%) fell into the low risk group, 77 (48.7%) indicated mild burnout, 26 (16.5%) indicated moderate burnout, and 8 (4.4%) indicated severe burnout (see Table 3).

Data was also analyzed for each of the five teams. The largest percentage of all teams fell into the mild burnout level. Men's football, with 70 participants, had a majority of 33 (47.1%) in the mild burnout category, 27 (38.6%) in the low risk category, 8 (11.4) indicated moderate burnout, and 1 (1.4%) indicated severe burnout (see Table 4). Men's golf, the smallest team in the Athletic Department, had eight athletes take the survey. The most popular category for this group was also mild burnout with five (62.5%), two (25.0%) with low risk for burnout, none for moderate burnout, and one (12.5%) for severe burnout (see Table 5). Men's track and field had 29 athletes complete the survey. Mild risk for burnout was the largest group with 14 (48.3%), low risk and moderate were tied with six (20.7%) each, and three (10.3%) indicated severe burnout (see Table 6). The women's track and field sample was similar to the men's team but included a few more athletes with 35 total athletes. Mild burnout was the most common category

with 17 (48.6%), nine (25.7%) indicated moderate burnout, six (17.1%) were considered low risk, and three (8.6%) indicated severe burnout (see Table 7). Finally, women's volleyball contributed nine athletes. Mild burnout risk was once again the most common with 4 (44.4%), three (33.3%) indicated low risk, two (22.2%) were in the moderate burnout category, and none in the severe burnout category (see Table 8).

Beck Depression Inventory (BDI)

For the BDI, possible scores range from zero to 63. In this sample, the range was from zero to a maximum score reported of 42. The average score for all participants in this sample was 9.1, with a standard deviation of 7.8. The data is not normally distributed, with a significant, positive skewness of 1.5. This indicates that the curve pulls to the right of a normalized curve. The curve is also quite leptokurtic, with a kurtosis of 2.5. This means that the frequency distribution is more peaked than normal, with lighter tails (see Table 2).

In order to evaluate scores for the purpose of screening, four categories are recommended by the authors of the instrument: 1-13 is considered minimal depression, 14-19 corresponds with mild depression, 20-28 corresponds with moderate depression, and 29-63 corresponds with severe depression. For this sample, 122 of the 158 participants (77.2%) fell into the minimal depression group, 20 (12.7%) indicated mild depression, 9 (5.7%) indicated moderate depression, and 7 (4.4%) indicated severe depression (see Table 9).

Analyses were completed for each of the five teams on the BDI. The largest percentage of all teams fell into the minimal depression level. Men's football (n = 70) had a majority of 58 (82.9%) in the minimal depression level, 8 (11.4%) at the mild depression level, 3 (4.3%) indicated moderate depression, and 1 (1.4%) indicated severe depression (see Table 10). Men's golf (n = 8) was completely homogeneous with 100% of athletes in the minimal depression

category (see Table 11). Men's track and field (*n* = 29) had 23 (79.3%) with minimal depression, three (10.3%) were in the mild depression category, two (6.9%) in the moderate depression category, and one (3.4%) indicated severe depression (see Table 12). Women's track and field (*n* = 35) had 21 (60.0%) with minimal depression, seven (20.0%) indicated mild depression, four (11.4%) were in the moderate depression category, and three (8.6%) indicated severe depression. See Table 13. Women's volleyball (*n* = 9) had only two categories: seven (77.8%) were at minimal risk for depression, and two (22.2%) exhibited mild depression symptoms (see Table 14).

British Athletes Lifestyle Assessment Needs in Career and Education (BALANCE)

Possible scores on the BALANCE range from 12 to 84. In this sample, scores ranged from a minimum of 24 to a maximum of 65. The arithmetic mean was 38.3, with a standard deviation of 8.0. The data is not normally distributed, with a significant, positive skewness of 1.0. This indicates that the curve pulls to the right of a normalized curve. The curve is also leptokurtic, with a kurtosis of 1.3, indicating a higher peaked frequency distribution than normal, with lighter tails (see table 2).

Scores on the BALANCE were dichotomized into four groups: scores of 12-29 were considered low risk, 30-47 mild transition risk, 48-65 moderate transition risk, and 66-84 severe transition risk. This assessment has previously been shown to accurately predict sport transition issues among samples of athletes, with scores above 65 indicating considerable career termination adjustment difficulties (Lavallee, Golby & Lavallee, 2002; Lavallee & Wylleman, 1999). For this sample, 14 of the 158 participants (8.9%) fell into the low risk group, 126 (79.7%) indicated mild transition risk, 18 (11.4%) indicated moderate transition risk, and 0 indicated severe transition risk (see Table 15).

Analyses for each of the five teams mirrored the totals. The largest percentage of all teams fell into the mild transition risk category. No one from any team was considered at severe risk for transitioning issues. Men's football (n = 70) had a majority of 55 (78.6%) at mild risk for transition issues, 9 (12.9%) in the low risk category, and 6 (8.6%) indicated moderate transition risk (see Table 16). Men's golf (n = 8) had seven (87.5%) in the mild transition risk category and one (12.5%) in the moderate transition risk category (see Table 17). Men's track and field (n = 29) had 24 (82.8%) in the mild risk category, three (10.3%) were in the moderate transition risk category, and two (6.9%) in the low risk category (see Table 18). Women's track and field (n = 35) had 27 (77.1%) at the mild risk level, six (17.1%) indicated moderate risk, and two (5.7%) indicated low risk for transition issues (see Table 19). Women's volleyball (n = 9) had only two categories: eight (88.9%) were at mild risk, and one (11.1%) was at low risk for transition issues (see Table 20).

Demographics

Demographic data were collected in order to evaluate sex, gender, age, ethnicity, student status, mother's highest level of education (socioeconomic status proxy), and post-college plan. There were 158 valid responses in this section. The purpose of collecting these demographic variables was to understand associational relationships between specific groups (i.e., sport or student status) and scores on the three assessments.

Sex & Gender

Of the 158 valid responses for, 68.4% (n = 108) were male, 31.6% (n = 50) were female, and 0% marked intersex or other. The gender breakdown for this sample was 68.4% (n = 108) male/man, 31.6% (n = 50) female/woman, with 0% of participants marking transgender, gender queer/non-conforming, or gender non-binary. According to the NCAA Institutional Performance

Program (IPP), the sex breakdown for the 2018-2019 season at this university was 55.8% male (*n* = 249) and 44.2% (*n* = 197) women. The sample for this study was, therefore, more heavily male compared to the overall population. This was due to the inclusion of a large male team (football) and only two women's teams.

Age

Participants were given age answer choices ranging from 18 to 25 +. The arithmetic mean age was 20.32 years and the mode age was 21 years with 29% (*n* = 46) participants. Student athletes who were 18 years of age were 11.4% (*n* = 18) of the sample, 18.4% (*n* = 29) were 19 years of age, 24.7% (*n* = 39) were 20 years of age, 29.1% (*n* = 46) were 21 years of age, 12.0% (*n* = 19) were 22 years of age, 2.5% (*n* = 4) were 23 years of age, 0% were 24 years of age, and 1.9% (*n* = 3) were 25 or older.

Ethnicity

Participants were asked to provide their ethnicity. They were able to choose all that applied. Therefore, the percentages in total will equal over 100% and the *n* will be over 158. The majority (56 %) of participants self-identified ethnicity as European or European American (*n* = 101), 34% self-identified as African or African American (*n* = 62), 1.7% self-identified as Asian or Asian American (*n* = 3), 2.2% self-identified as Hispanic/Latinx (*n* = 4), 3.9% self-identified as Native American (*n* = 7), 1.1% self-identified as Middle Eastern (*n* = 2), and 0.6% preferred not to provide ethnicity (*n* = 1). NCAA IPP only provided three categories for ethnicity: white, African American, and other. The race/ethnicity breakdown for the 2018-2019 season at this university was 70.4% (*n* = 314) white, 23.3% (*n* = 104) African American, and 6.3% (*n* = 28) other. The sample used in this study included more people of color and provided much more specificity of ethnic category.

Student Status

Current student status ranging from freshman to graduate student was recorded. The mode for student status was junior with 27.2% (*n* = 43), but it was generally an even split between statuses: 24.7% (*n* = 39) were freshman, 22.2% (*n* = 35) were sophomores, 21.5% (*n* = 34) were seniors, and 4.4% (*n* = 7) were graduate students.

Socioeconomic Status

Participants were asked to provide mother's highest level of completed education, a common proxy for socioeconomic status (SES; Aaro et al., 2009). As a multifactorial concept, there is no one "best measure" for SES (Ensminger et al., 2000). The largest percentage (30.4%) completed a four-year college degree (*n* = 48), 19.6% completed a Master's degree (*n* = 31), 17.7% completed high school (*n* = 28), 15.2% completed some college (*n* = 24), 9.5% completed a 2-year degree (*n* = 15), 3.2% completed less than high school (*n* = 5), 2.5% completed a professional degree (*n* = 4), and 1.9% completed a doctorate (*n* = 3).

Post-College Plan

Participants were asked to provide their post-graduation plan. The majority of participants (36.7%, *n* = 58) indicated that they planned to find a job, 28% (*n* = 44) planned to go on to graduate school, 23.4% (*n* = 37) planned to play professionally, 8.2% (*n* = 13) indicated that they were unsure of future plans, and 3.8% (*n* = 6) specified "other" and wrote in military, either grad school or a job, play professionally and continue my degree, and medical school. See Table 21 for demographic data.

Test of Hypotheses

Hypotheses 1-3: Correlations

In order to test for the assumption of linearity, scatterplots were created. Scatterplots can

give a visual representation of the association/correlation and show any outliers that exist in the data. Simple scatterplots were developed for each relationship between the three assessments. The scatterplot showing the correlation between the BDI and ABQ provide us with a positive correlation, with the best fit of a quadratic line that fit the points pretty well; $r_2 = 0.274$. This is a slightly better fit than the linear regression line with an $r_2 = 0.268$. For the relationship between BDI and BALANCE, there is also a positive correlation, with the best fit of a quadratic line that fit the points only slightly well; $r_2 = 0.174$. This is a slightly better fit than the linear regression line with an $r_2 = 0.172$. Finally, the relationship between ABQ and BALANCE shows the same pattern with a positive correlation and the best fit of a quadratic line that fits the points only slightly well; $r_2 = 0.159$. This is a slightly better fit than the linear regression line with an $r_2 = 0.151$. As the three assessments are not quite normally distributed and have a slightly better fit with a quadratic regression line, nonparametric statistical analyses were used. Spearman Rho is such a nonparametric test that does require neither normality nor linear relationships.

To investigate if there were a statistically significant associations between BDI, ABQ, and BALANCE scores a correlation matrix was computed. As there are three correlations, the odds are increased that one could be statistically significant by chance (i.e., increased chance for a type I error). Therefore, a smaller *p* value was computed using a Bonferroni correction. This divides the typical significance level (0.05) by three, with a new *p* value of 0.017. Correlations between the three assessments shows that all three pairs were significantly correlated. The strongest correlation, considered a large effect size according to Cohen (2013), was between the BDI and the ABQ, $r(158) = 0.553$, $p < .01$. This indicates that participants who scored high on the depression assessment were very likely to score high on the burnout assessment. BDI was positively correlated with BALANCE with a medium to large effect size, $r(158) = 0.403$, $p < .01$.

Finally, ABQ was also positively correlated with BALANCE, with a medium effect size, $r(158) = 0.386$, $p < .01$. See Table 7 for correlation data.

Hypotheses 4-6: Regression

The purpose of a multiple regression is to predict an interval or scale dependent variable from a combination of several interval and/or dichotomous predictor variables. To test these hypotheses, the main question is: is there a combination of sex, gender, sport, student status, age, SES, and post-college plan that will predict scores on the BDI, ABQ, and BALANCE? Assumptions of multiple regression include: no multicollinearity in predictor variables, a linear relationship between the predictor variables and the dependent variable, the errors are normally distributed and uncorrelated with the predictors, and the variance of the residuals (difference between actual and predicted scores) is constant. Multicollinearity is considered to not be an issue, as all demographics are measuring different personal factors. This assumption was checked using correlations between all variables. One exception was sex and gender. Although two separate categories (sex as biological and gender as psychological), in this sample sex and gender were interchangeable. Therefore, for this analysis, sex was included in sport and gender was not used. The other exception was student status and age, which were (not surprisingly) highly correlated, $r(156) = 0.873$, $p < .01$. Therefore, in this analysis, only student status was used. All other assumptions were checked met using scatterplots.

To test hypothesis four, a multiple regression was conducted to determine the best linear combination of sport, ethnicity, student status, SES, and post-college plan for predicting scores on the BDI. The unstandardized coefficients, standard errors, and beta weights can be found in Table 8. This combination of did not significantly predict score on the BDI, $F(5, 150) = 2.25$, $p = 0.052$. The adjusted R squared was 0.039, indicating that only 3.9% of the variance in BDI can

be explained by this model. The only slight significant predictor variable is sport with a beta weight of 0.794.

To test hypothesis five, a multiple regression was conducted to determine the best linear combination of sport, ethnicity, student status, SES, and post-college plan for predicting scores on the ABQ. The unstandardized coefficients, standard errors, and beta weights can be found in Table 8. This combination of did not significantly predict score on the ABQ, $F(5, 150) = 2.17$, $p = 0.06$. The adjusted R squared was 0.036, indicating that only 3.6% of the variance in ABQ can be explained by this model. Once again, the only significant predictor variable is sport with a beta weight of 1.154.

To test hypothesis six, a multiple regression was conducted to determine the best linear combination of sport, ethnicity, student status, SES, and post-college plan for predicting scores on the BALANCE. The unstandardized coefficients, standard errors, and beta weights can be found in Table 8. This combination of did not significantly predict score on the BALANCE, $F(5, 150) = 2.88$, $p = 0.016$. The adjusted R squared was 0.057, indicating that only 5.7% of the variance in BALANCE can be explained by this model. The only slight significant predictor variable is sport with a beta weight of 0.990.

For the multiple regressions, the required p value was .05 x 3 = .015, as there were three consecutive analyses. Significance was marginal for hypothesis six (a linear combination of variables to predict scores on the BALANCE) with a p value of .016. The most significant (but not statistically significant) predictor variable for all multiple regressions was sport, indicating that sport did make a difference in scores on the assessments.

CHAPTER 5

DISCUSSION

The overarching goal of this study was to increase understanding of psychological well-being in a population of S.A. No previous study to date has either collected data on depression, burnout, and transition readiness in this population or used that data to provide recommendations. Due to this lack of guidance in the literature, the primary statistical approaches were descriptive and associational.

Hypotheses proposed were thus broad and based on known relationships in other research sectors. The first three hypotheses (i.e., positive correlations between depression, burnout, and transition risk) were strongly supported by the data, and the null hypotheses were rejected. These relationships were not a surprise, as the literature notes that athletes experiencing burnout are more likely to be depressed (Gustafsson, Hassmen, Kentta, & Johansson, 2008). It has also been found that athletes who identify primarily as athletes are more likely to have transition issues and are more at risk for burnout (Scanlan, Carpenter, Schmidt, et al., 1993; Webb, Nasco, Riley, & Headrick, 1998). Finally, depression and other negative mental health issues (e.g., anxiety, maladaptive coping strategies, and substance abuse) have been linked to issues with transition out of sport (Grove, Lavallee, & Gordon, 1997; Stephan, Bilard, Ninot, & Delignieresm 2003; Wippert & Wippert, 2008; 2010).

Null hypotheses were unable to be rejected for the proposed prediction hypotheses. Thus, attempts to use demographic variables to predict risk for the three psychological factors were not viable. This lack of relationship was surprising, as the literature notes several demographic factors that affect levels of burnout, depression, and transition risk. For burnout, studies of athletes indicate that overtraining cycles can lead to burnout (Silva, 1990). Therefore, sport type

was hypothesized to be a contributing factor, as each sport was in a different part of their competitive season. Race and ethnicity have also previously been found in some studies to affect transition readiness, but no overall consensus has been found (Lewis, 1997; Perna, Zaichkowsky, & Bocknek, 1996). More recent investigations of the effect of race and ethnicity have been largely qualitative and have examined perceptions of career transitions of African American S.A. (Benson, 2000; Harrison & Lawrence, 2004; Lawrence, 2005). Generally, the goal of these studies was to examine the role of race in athletic careers. Those with lower socioeconomic statuses, have been found to struggle more with depression and transition readiness (Lavallee, 2006; Lorant et al., 2003). This is far from an exhaustive list of relationships expected between demographic variables reported and mental health factors measured, yet none were found to be predictive. In the following sections, I will discuss each variable, statistical approach, limitations to the current study, and future directions for research.

Burnout

The Athlete Burnout Questionnaire (ABQ) was used to rate S.A on their current level of burnout. This assessment includes five items to measure each of the three components of burnout as defined by Raedeke and Smith (2004; 2009): reduced accomplishment, mental and physical exhaustion, and sport devaluation. Total burnout scores were computed for each participant.

Connections to Existing Literature

While much research has been conducted on the factors that affect burnout and consequences of burnout, the rates and prevalence remain unclear. In a sample of 68 NCAA athletes, it was estimated that 47% experienced burnout (Silva, 1990). However, in a more recent study of elite male rugby players that dichotomized burnout into high and low, only four percent were found to have high levels of burnout (Hodge, Lonsdale, & Ng, 2008). In a sample of 980

adolescent athletes in Sweden, one to nine percent were found to have high levels of burnout using the Eades Athletic Burnout Inventory (a precursor to the ABQ; Gustafsson, Kenttä, Hassmén, & Lundqvist, 2007). Dubuc-Charbonneau, Durand-Bush, and Forneris (2014) also found a very low percentage (four percent) of high burnout levels in a sample of Canadian S.A.

In the current study, burnout was defined using scale-defined levels: low risk, mild, moderate, and severe burnout. The most common category for the total sample was mild burnout with 48.7% (n = 77). Twenty-one percent (n = 34) of the sample was at a higher risk in the moderate and severe burnout categories. Finally, 4.4% of the S.A. reported severe levels of burnout. This rate is consistent with high burnout rates found in other studies (Dubuc-Charbonneau et al., 2014; Hodge et al., 2008). Yet due to categorization inconsistencies (i.e., rating burnout as either high or low) and "psychometric shortcomings," only those with severe burnout are of concern (Gustafsson et al., 2007, p. 32). If mild, moderate, and severe levels of burnout are included, 69.6% (n = 111) of the sample reported experiencing burnout symptoms. I posit that early measurement and detection can lead to prevention strategies.

Burnout frequencies and percentages for teams follow a similar, although not identical pattern to the total sample levels. For the five teams surveyed, mild burnout was the most common category. Percentages of mild burnout ranged from 44.4% (Women's Volleyball) to 62.5% (Men's Golf). Four out of the five teams had the most S.A. in the mild burnout category, with the second highest number in the low risk category. Women's track had 34.3% in the moderate and severe categories combined, the most at risk team for burnout in the sample.

While the rates of burnout did vary based on team, sex of players was not predictive of burnout. In contrast, several studies in the existing literature have previously indicated that female S.A. experience high levels of emotional and physical exhaustion compared to their male

peers (Cremades et al., 2008; Gustafsson, Kenttä, Hassmén, & Lundqvist, 2007). This trend is not universal, however and was not found in this study either (Charbonneau, Durand-Bush, & Forneris, 2014). This lack of difference may reflect the truth – no sex difference exists in this population. Yet because only two female teams were surveyed, these results are not conclusive.

Area of Concern: Mental and Physical Exhaustion

Of the three aspects of burnout assessed within the ABQ (i.e., reduced accomplishment, mental and physical exhaustion, and sport devaluation) the one reported by athletes at the highest level was by far mental and physical exhaustion. It has been suggested in the literature that mental and physical exhaustion is one of the first signs of burnout to emerge (Cresswell & Eklund, 2006; Kenttä & Hassmén, 1998). For four out of the five questions regarding exhaustion, over 62% of S.A. agreed. These included feeling, "so tired from training that it's hard to do other things" with 72.2% (n = 114), "extremely tired" with 69.1% (n = 109), "physically exhausted from the sport" with 67.3% (n = 106), and "exhausted by physical and mental demands of the sport" with 62.1% (n = 98). The only other highly reported item was, "feeling that they are not performing up to their ability" with 60.1% (n = 95).

While it is true that most athletes will experience fatigue and exhaustion at certain points in the season, this state should subside following a recovery period (Gustafsson, Madigan, & Lundqvist, 2017). Given that the teams sampled in the current study were in various parts of their seasons (except Men's and Women's Track and Field, which had just finished their competitive season), there should have been a difference in reported levels of burnout if aerobic build-up phases were the cause of this exhaustion. This was not the case. Not only were a majority of these athletes exhausted, three-fifths reported that they were not performing up to their ability, suggesting that the exhaustion was not providing the desired result. If left unchecked, this mild to

moderate state of exhaustion can lead to total burnout (Gustafsson et al., 2007; Raedeke & Smith, 2009).

Recommendations

The consequences associated with burnout are very concerning: illness (Cresswell & Eklund, 2006; Gould et al., 1996, 1997), injury (Cresswell & Eklund 2005, 2006) lack of motivation (Cresswell & Eklund, 2005, 2006; Gould et al., 1996; Lemyre et al., 2006), depression and anxiety (Cresswell & Eklund, 2006; Gustafsson et al., 2008), and possible withdrawal from sport (Smith, 1986). Based on these data and potential consequences, I recommend programming and intervention strategies that include, "monitoring demands placed on S.A., their resources and coping skills, as well as their stress and burnout levels whenever possible" (Charbonneau, Durand-Bush, & Forneris, 2014, p. 147). Moreover, I believe that a focus on "sport-life" balance should be emphasized in line with the conclusions of Charbonneau et al. that "one burnout case is one too many" (2014, p. 147).

Depression

Using the Beck Depression Inventory (BDI), S.A. were asked to choose a statement that best described the way they have felt in the past two weeks. There were 21 symptoms of depression measured in this assessment: sadness, feelings about the future, feelings of failure, life satisfaction, guilt, feelings of being punished, disappointment in self, assessment of weaknesses, suicidal ideation, crying, irritation, interest in others, decision-making, body image, productivity, sleep disturbance, fatigue, appetite, weight loss, concern about health, and libido. Levels of depression included minimal, mild, moderate, and severe (Beck, Steer, & Brown, 1996).

Connections to Existing Literature

The U.S. Department of Health and Human Services (2017) reports that 13.1% of young adults (ages 18-25) have had at least one depressive episode in the previous year. Rates of depression for college students range from 19% to over 30% (American College Health Association [ACHA], 2008; Beiter et al., 2015). Some studies indicate that collegiate athletes are at an even greater risk for depression compared to the general college population. Yet the reported prevalence rates are comparable to the general collegiate population, ranging from 15.6 to 33% (Gill, 2008; Killeya-Jones, 2005; Proctor & Boan-Lenzo, 2010; Settles, Sellers, & Damas, 2002). In a study of 465 NCAA Division I S.A., 23.7% exhibited a clinical level of depression, and 6.3% reported a moderate/severe level of depression (Wolanin, Hong, Marks, Panchoo, & Gross, 2016). Finally, Cox, Ross-Steward, and Foltz (2017) study of 950 NCAA Division I S.A., 33.2% experienced symptoms of depression.

In the current study an overwhelming majority of the participants were in the minimal depression category (77.2%), indicating that for most items they responded with the first/not at-risk answer choice. However, depression symptoms were common in this sample with over 90% of athletes indicating at least one symptom. The average participant reported nine symptoms of depression (out of the 21 total), based on the mean value. The other 22.8% of participants did indicate at least mild depression, as scored by the assessment. This rate is consistent with other athlete populations (NCAA, 2019; Wolanin et al., 2016; Yang et al., 2007). The percentage of moderate and severe levels of depression was higher in this study than in previous samples – 10.1% compared to 6.3% (Wolanin et al., 2016).

While the fact that 77.2% of the sample were found to be at minimal risk for depression is encouraging, it is important to remember that almost one quarter of the sample was found to

have at least mild risk for depression. The results from this study indicated that more than one out of five of these athletes is dealing with depression symptoms, while 16 are living with moderate or severe symptoms. This indicates feelings of sadness, failure, pessimism, guilt, suicidal thoughts, worthlessness, irritability, fatigue, and disturbances in the relationship to the self, decision-making, energy, sleep patterns, concentration, appetite, and libido.

Team frequencies and percentages again followed a similar pattern to the overall sample levels of depression. For all five teams, minimal depression was the most reported category. Percentages in this category ranged from 60% (Women's Track and Field) to 100% (Men's Golf). A 2016 article by Wolanin et al. compared sport and level of depression in collegiate athletes. Women's Track and Field had the highest rates of depression in both studies. Wolanin et al. (2016) did not provide hypotheses for this result, but stated that additional research exploring protective and risk factors for depression in various sports was warranted.

Areas of Concern

Being self-critical for weakness or mistakes was the most common symptom, with two-thirds of the S.A. sharing this feeling. Self-blaming attitudes are related to maladaptive perfectionism, which blames failure on internal and stable factors, and has been associated with depression (Elbe & Jensen, 2016). Other common symptoms included constant irritation (61%), sleep disturbances (50%), and fatigue (50%). While depression is not uncommon in this life stage athletes do experience increased stressors (e.g., competing at high levels, balancing academic and sport performance, and the stigma of mental health issues).

Suicidal ideation was present in 14% of participants in this study. According to Lamis & Lester (2011), S.A. appear to be less likely to have suicidal ideation that other college students, yet this has been found vary depending on sport type and sex. Some factors seem to be protective

against suicidal ideation: sport participation in general, sex (males), and ethnicity (white athletes were less likely to have suicidal ideation compared to non-athlete, white peers. In a nine-year analysis of suicide in NCAA athletes, it was found that the suicide rate for S.A. is lower than the general or collegiate populations (Rao et al., 2015).

Recommendations

Depression is often silent. Even for those who are experiencing symptoms, it is difficult to determine how problematic they may be. Requiring S.A. to be self-advocates with issues that are difficult to define and laced with stigma is unfair and unrealistic. Wolanin and colleagues (2016) cautioned sports medicine professionals to "avoid the presumption that athletes are at decreased or minimal depression risk." High depression prevalence rates (30 – 33%) found in recent studies indicate that depression is a significant issue in collegiate athletics (Cox, Ross-Stewart, & Foltz, 2017). The rate found in this sample was lower (22.8%). As the above-mentioned study had 950 participants and the current study had 158 participants, results from the current investigation should be interpreted with caution given the sample size and team representation within this study.

Recommendations also include an increased need for mental health screenings, especially in conjunction with standard sport medicine care (Wolanin et al., 2016). My recommendation based on both these data and existing literature is to provide mental health education to athletes, focusing on factors that increase susceptibility of mental illness (e.g., female athletes, in-season athletes, underclassmen, and athletes with injuries; Cox, Ross-Stewart, & Foltz, 2017). If we can normalize this conversation, depression and mental health in general can become like physical health – something to track, apply preventative techniques, and treat as a real illness.

Measurement Limitations

The answer choices in the BDI vary from the other two measurement tools that include Likert type items. For the BDI, answer choices are ordinal (i.e., in order of symptom severity) but not interval (i.e., answer choices that are equidistant from each other). The way that this specific assessment tool is constructed, the first answer choice corresponds to "not feeling X." For instance, the first item is about sadness, and the first answer choice is "I do not feel sad." The following answer choices all correspond to feeling sad, but at various levels (i.e., "I feel sad much of the time; I am sad all the time; I am so sad or unhappy that I can't stand it"). Therefore, it should be noted that if an individual responded with the second answer choice for all items, they would receive a score responding to "mild depression." Yet because of the construction of the answer choices, this could still be of a concern regarding the accuracy of measurement (i.e., there are more depression symptoms than the scores suggest).

Transition Readiness

The British Athletes Lifestyle Assessment Needs in Career and Education (BALANCE) assessment was used to evaluate transition readiness. This assessment tool evaluates 12 factors shown to be predictive of adaptation to transition out of sport: control of transition, athletic identity, social support, previous transition experience, sport involvement post-transition, degree of occupational planning, identity foreclosure, socioeconomic status, transferable (from athletics to career) skills, sport goal achievement, access to career support services, and multifaceted identity. Each factor was reflected in one item, resulting in 12 total items.

Connections to Existing Literature

There is a large gap between measurement and standardized approaches for sport retirement/transitioning out of sport (Leonard & Schimmel, 2016). Researchers have investigated

career transitions in sport over the past three decades. In that time, predictors of transition out of sport have been identified (e.g., athletic identity, type of transition, etc.). Early research on this topic evaluated the consequences of transitioning out of sport and later research focused on types of transition (i.e., planned vs. unplanned/voluntary vs. involuntary; Park, Lavallee, & Tod, 2013). Most recently, research has been intervention-based with programs designed to aid S.A.s in their transition out of sport (Hansen, Perry, Ross, & Montgomery, 2019; Tomalski et al., 2019). Yet statistical analyses and even descriptive statistics regarding transition readiness are not available.

In the current study, a sizeable majority of participants (79.7%) were in the mild transition risk category, indicating that transitioning out of sport will be somewhat challenging for most athletes surveyed. Interestingly, no one indicated severe risk for transitioning issues. Understanding of transition readiness is very scant in the literature, with interventions based on theory far more common than measuring the factors that may be associated with successful transitions prior to the actual transition experience. Therefore, what helps athletes be prepared for a transition out of sport is largely unknown.

Other notable items from the BALANCE includes generally positive responses regarding athletes' perceptions of their transferrable skills, social support, and preparedness for non-athletic career. A huge majority (90%) agreed that they have skills that are transferrable to the job market. This is a good sign, as many researchers have used psychological techniques (e.g., cognitive behavioral therapy and skill-building) that focus on transferrable skills when aiding athletes in their transition out of sport (Bernes et al., 2009, McKnight, 2007).

When asked if they had a social support system, 88% of this sample agreed or strongly agreed. This number is not surprising, as a 2014 study of 465 collegiate athletes found that the

majority of participants were highly satisfied with their social support based on the Social Support Questionnaire (DeFreese & Smith; Sarason, Sarason, Shearin, & Pierce, 1987). This social support will likely help the S.A. have less difficulty in their transitions (Schwendener-Holt, 1994).

Regarding their preparedness for non-athletic careers, 73% said that they felt prepared. In a 2013 study of career planning for Division I S.A., Tyrance, Harris and Post found that career planning attitudes varied based on athletic identity, race, gender, sport, and expectation to play professionally. In this sample of 538 S.A., males had a better sense of the job market, compared to females. Those with high athletic identity had lower career optimism. Revenue sports had lower levels of career optimism, compared to non-revenue sports. Finally, those athletes who expected to play professionally were more optimistic about future careers. The current study did not see these strong trends.

Perhaps their optimism for careers was due to access to career services, as 86% felt that they had access to these services. Interestingly, at the participants' university, career services are available for any student. Yet 14% of the S.A. surveyed did not feel that they had access to these services. Is this simple lack of awareness or a more complex reason? A 1995 study from Lantz found that career planning was positively associated with transition readiness. Conversely, a lack of personal and career development was found to be related to transition issues (Chow, 2001; Stronach & Adair, 2010; Swain, 1991).

Percentages for individual teams once again followed the same pattern as the overall sample values. For all teams surveyed, the mild transition risk category was most prevalent with percentages in this category ranging from 77.1% in Women's Track and Field to 88.9% in Women's Volleyball. The two smallest teams, Men's Golf and Women's Volleyball, were the

most homogenous with about 88% of athletes in the mild transition risk category. Women's Track and Field had the largest percentage in the moderate risk category with 17.1%, this was also the highest category reported in any team.

Areas of Concern: Identity Foreclosure

Previous research has indicated that athletic identity is the strongest predictor of transition success and items on this topic were the most homogeneous in this sample. Over 90% of participants describe themselves as athletes, and 60% indicate that "athlete" is their most salient identity. These figures are consistent with quantitative studies of athletic identity in collegiate S.A. (Matthews, 2019). While a strong athletic identity can aid performance during eligibility, after eligibility is exhausted it can become a liability (Horton & Mack, 2000; Jewett, Kerr, & Tamminen, 2019; Webb, Nasco, Riley, & Headrick, 1998). If an athlete forecloses on all other identities, save that of their athletic self, transitioning out of that role becomes not just a shift from one activity to another (Murphy, Petitpas, & Brewer, 1996). In these cases, transitioning out of sport requires a total reconstruction of identity (Kerr & Dacyshyn, 2000; Lally, 2007). However, the data from the current study goes on to tell a different story. When asked if they felt that they had multiple identities, not just that of an athlete, 87% agreed. Therefore, while it may be problematic for the process of transitioning that they are losing their most salient personality characteristic, it appears they have others that may come to the forefront.

Recommendations

Recommendations based on these data and literature involve starting earlier with transition efforts, implementing prevention-oriented programs, and validation of the emotional nature of transitioning out of sport (Bernes et al., 2009; Gordon & Lavallee, 2012; Park, Lavallee, & Tod, 2013). Transitioning out of sport is, of course, inevitable for all athletes at

some point, whether that be after college or after professional play (Bernes et al., 2009; Zaichkowsky, Kane, Blann, & Hawkins, 1993). There is a plethora of research that suggest that transitioning out of sport can cause an identity crisis and other negative reactions (Grove, Lavallee, & Gordon, 1997; Lally, 2007; Warriner & Lavallee, 2008). In a 2012 mixed-methods study of transition out of sport, Leffler found that S.A. thought that they athletic department should provide education about sport retirement and that coaches should spearhead this process. Planning for retirement from sport has been shown to lead to fewer negative emotional responses and more positive ones both during and after transitioning out of sport (Alfermann, Stambulova, & Zemaityle, 2004; Stambulova, Stephan, & Japhag, 2007; Taylor & Ogilvie, 2001). As transitioning out of sport marks the end of one period of an athlete's life, it is important to validate this emotional upheaval (Bernes et al., 2009). Finally, the literature notes that while experiences in athletics may differ, sex and sport type have not been found to greatly affect transition (Shurts & Shoffner, 2004; Smallman & Sowa, 1996). Therefore, a handful of strategies for all sport types can be used.

Limitations

There were several limitations of this study. The most concerning with regard to validity of the study was the timing of assessments. First and foremost, the timing of my data collection (February and March) was limiting. This meant that the teams sampled were in differing parts of their competitive seasons. Some teams were in off-season, while others were in the middle of a season, and others still were just finishing conference championships. Obviously measuring all teams at the same point in the season would be ideal, as the time in season could have a significant impact on the variables included in this study (e.g., transition readiness).

Another time limitation that was very specific to this year was the global pandemic

known as COVID-19. Due to the severity and spread of the virus, the Spring 2020 semester was ended for all in-person meetings at midterm. This meant that no more data could be collected after week 8 of the semester. As the surveys are online, the researcher could have sent out requests for surveys to be completed in isolation. I felt that this was not appropriate given the circumstances, as burnout, depression, and transition readiness were all likely to be impacted by the COVID-19 pandemic.

As is common in the social sciences, self-report measures were utilized in this study. Using these types of assessments always has the ability to confound data. Participants may lie, or more commonly, not be aware of certain attitudes or behaviors that might influence their responses. Because surveys were taken during team meetings, social desirability or other social pressures may have resulted in participants misrepresenting attitudes. Once again, given the real-world setting and schedule limitations of the S.A., the researcher understood these risks.

The data collected in this study was confidential but not anonymous. Names were connected to the data, but this information was closely guarded. Names were required for two reasons – so that athletes that wanted their individual scores could be given those scores and any athletes that needed to be flagged for immediate help could be identified. Several S.A. did request their individual scores. Thankfully, no athlete met the threshold of being a harm to themselves or others.

There were several cases in the data where I wanted to know more about specific answers. In these cases, follow up questions (especially qualitative questions) would have been helpful. However, the decision was made to make the survey as short as possible, while still getting all the required information. Generally, surveys that are five to ten minutes result in far less attrition and attention to detail (Dillman, Smyth, & Christian, 2014). This survey in this

study had 64 items, already surpassing this length of time. Therefore, follow-up, open-ended questions were not used. It is of note, however, that while the survey was estimated to take 20-25 minutes to complete, the average length of time needed to complete the survey for this study was 12 minutes.

Another limitation was the lack of qualitative data in this study. I do not believe that this data provides us with the complete picture without follow-up questions. As the survey was far shorter in length of time needed to complete than previously estimated, adding open ended questions seems feasible. Possible topics of qualitative questions for future research include a self-description of mental health state, current concern/worries, current priority, and previous mental health diagnoses. Interviews with athletes or focus groups could be implemented in future studies where consensus cannot be made using the first method.

As the measurement tools used were validated and reliable for this population, I did not do a pilot study of the questionnaire with this group of S.A. This is a limitation and would have informed certain aspects of data collection, such as time needed to complete the survey (it was shorter than expected). Fortunately no unforeseen issues arose with the survey, but pilot testing is always advised when possible.

Finally, the results from this study cannot be generalized to all athletes or even all S.A.s. Only five teams were sampled: Men's Football, Men's Golf, Men's Track and Field, Women's Track and Field, and Women's Volleyball. The size of some of these teams, especially Men's Golf and Women's Volleyball were quite small with eight and nine respectively. Therefore, while these data provide us with a good starting point, conclusions cannot be drawn for other populations or other sports.

Deliverables

Reports will be provided to both the athletic administration and to coaches of each of the teams that took part in the data collection. These will be one-page reports that give the overall team percentages and recommendations based on those percentages. Coaches or administrators will not be given individual S.A. data. Any S.A. that requested their scores were provided with those scores. They were also given a personalized guide to what each score meant, as well recommendations based on their individual answers. An example of a report can be seen in Appendix F.

Future Directions

Implications and applications of this study are far reaching in sport psychology. While the NCAA is beginning to focus more and more on S.A. mental health, there is still a large measurement gap in the literature. Recent intervention strategies are based largely on theory, for example the S.A. Workshop (Hansen, Perry, Ross, & Montgomery, 2019)

This study was the first of its kind to ask athletes about these specific mental health issues. While working from theory, such as Schlossberg's 1984 Human Adaptation to Transition theory, can provide structure for interventions, many are several decades old or use transition broadly (e.g. retirement from the workforce). Ultimately, more measurement is needed, but also more valid and reliable measurement is needed in order to be able to most effectively plan, develop, and implement interventions to help S.A.s.

As noted in the limitations section, a small number of teams were surveyed for this study. In the future, collecting data on all (or most) of the teams at a university every year, prior to the beginning of the school year would be an important step to improving the overall assessment approach. Moreover, collecting data at multiple universities would allow for greater

generalizability and more effective programmatic development.

The current study asked S.A. about burnout, depression, and transition out of sport. Future studies could delve deeper into each issue, with a separate and more nuanced evaluation of each variable (i.e., an entire study focused only on predicting depression in a collegiate S.A. population). Conversely, other mental health issues that have been found to affect S.A. could be included (e.g., body image, eating disorders, and anxiety). Finally, injury status is an important correlate with several mental health issues (depression, anxiety, burnout, etc.) and should be at the center of research on S.A. mental health. This research is an important first step toward a comprehensive, preventative psychological assessment process in intercollegiate sport.

Conclusions

The purpose of this study was mainly exploratory – to gather data on three factors of mental health, find any associations between those factors, and to predict any risk factors using demographic variables. The most recent research on S.A. risk for mental health issues indicates that these athletes are at risk and issues are generally underreported (Beable, Fulcher, Lee, & Hamilton, 2017; Breslin, Shannon, Haughey, Donnelly, & Leavey, 2017; Sudano, Collins, & Miles, 2017; Way, Coker-Cranney, & Watson, 2020). Three validated measurement tools were used to measure burnout (ABQ), depression (BDI), and transition out of sport risk (BALANCE).

The three measures (ABQ, BDI, and BALANCE) were found to be positively associated based on non-parametric correlation analyses. Medium to large effect sizes were found between each pair, indicating that there are possibly shared factors between depression, burnout, and transition risk. These associations were expected, as burnout and depression have been found to be interrelated (Gustafsson, Hassmen, Kentta, & Johansson, 2008). Highly salient athletic identities have been shown to relate not only to transition issues, but also to burnout (Scanlan,

Carpenter, Schmidt, et al., 1993; Webb et al., 1998). Lastly, the relationship between depression and transition issues has been found to be multidirectional (i.e. S.A. with higher depression and more likely to have transition issues and transition issues are likely to cause depression; Grove, Lavallee, & Gordon, 1197; Stephan, Bilard, Ninot, & Delignieresm 2003; Wippert & Wippert, 2008; 2010).

Proposed models using demographic variables (sport, student status, SES, post-college plan, and ethnicity) were not able to predict level of burnout, level of depression, and transition readiness in this sample. A study by Holmberg and Sheridan (2013) also found that demographic variables (gender, year of eligibility, and type of scholarship) were not predictive of athlete burnout in a sample of 598 collegiate athletes. Some, but not all, sports were predictive of burnout including Tennis and Track and Field. Previous studies have found correlations between sex, sport, and SES with level of depression (Wolanin et al., 2016). Conversely, regression models that included grade in college, gender, and SES only accounted for about 3% of variance in the happiness levels of collegiate athletes (Denny & Steiner, 2009). Finally, demographic predictors of transition quality have been indeterminate (Park, Lavallee, & Tod, 2013). Demographic variables measured include gender, age, social status, sport, race, marital status, competitive levels, and cultural factors.

Rates of high/severe burnout in this sample were consistent with those found in the literature on college student athletes at about four percent (Dubuc-Charbonneau et al., 2014; Hodge et al., 2008). The main area of concern in this sample was mental and physical exhaustion, with 60% or more athletes reporting this issue depending on the specific question. Although the majority of participants were in the mild burnout category, preventative measures should be taken so that this state of exhaustion does not lead to total burnout (Gustafsson et al.,

2007; Raedeke & Smith 2009).

Depression rates in this sample (22.8%) were similar to other S.A. populations (Cox et al., 2017; NCAA, 2019; Wolanin et al., 2016; Yang et al., 2007). Moderate and severe levels of depression were slightly higher in the current study (10.1%) compared to previous samples (6.3%; Wolanin, et al., 2016). Women's Track and Field had the highest rates of depression in this sample, as well much larger samples (Wolanin, Hong, Marks, Panchoo, & Gross, 2016). Main areas of concern found in the data include feeling self-critical for weakness and mistakes, constant irritation, sleep disturbances, and fatigue. While not a high percentage, I believe that 14% of participants engaging in thoughts of suicide is too high.

Level of transition risk was calculated in this study. Percentages, frequencies, or other statistical data on transition level of risk has not been published to my knowledge. Four-fifths of the sample were in the mild transition risk category, the second of four levels of risk. Athletic identity foreclosure was the largest area of concern, as athletic identity is considered the strongest predictor of transition success (Park, Lavallee, & Tod, 2013). While 60% of the S.A. indicated that athlete was their most salient identity, 87% said that they did have other identities as well.

Women's Track and Field had the most at-risk profile of the five teams surveyed in this research. This status is not unique to this study, as Women's Track and Field has been shown to have significant higher rates of depression compared to other sports (Wolanin et al., 2016). Rationale for these finding include the experience of race in sport, the intersection of race and gender, coach turnover, season length, and individual versus team sports. Studies of African, African American, and Black athletes show that race plays an important role in the lives of these athletes, compared to their light-skinned peers (Lawrence, 2005). Racial discrimination,

stereotypes (especially about posited differences in body type, ability, and function), and even empowerment are part of this experience. For women of color, these racial stereotypes are paired with gendered stereotypes (e.g., Serena Williams and the "angry black woman"). For instance, African American women (and men) are seen as "natural athletes", while their European American peers' success is more likely to be attributed to hard work (Douglas, 2002; Shultz, 2005). The Track and Field team surveyed also experienced coach turnover in recent years, which can create a less stable environment (although Men's Track & Field and Women's Volleyball have also experienced head coach changes within the last year). Length of season for Track and Field must also be considered as a reason for mental health challenges, as the indoor and outdoor season (spanning most of the calendar year) are expected for all team members. Finally, differences in depression risk between individual and team sports have been supported by the literature (Hanrahan & Cerin, 2009). Internal attributions for failures are more common in individual sports and this attribution style can lead to depression (Alloy et al., 2006).

In conclusion, the results of the study show that most S.A. in this sample are at mild risk for burnout, depression, and transition issues. Mental health screenings, like this one, can provide information that cannot be inferred from grades, coach-athlete interactions, or graduation rates. While the risk may seem low, preventative screenings and interventions can help avoid larger issues in the future. This is particularly true with regard to transition out of sport, as only a small percentage of NCAA athletes go on to play at the professional level (NCAA, 2015). Finally, although proactive measures and screening practices are currently extremely variable at the collegiate level (Kroshus, 2016), these data show that indeed some individual S.A. are struggling with burnout, depression, and transition readiness. Moving forward, recommendations and intervention strategies may need to be geared towards specific teams. In the current study, team

profiles did look different, so one-size-fits-all method may not be the most appropriate.

EXHIBITS

Tables

Table 1

Information Regarding Research Purpose, Sample, Variables, Approach, and Analyses

Planned Analysis

Research Purpose	***Sample***	***Variables***	***Research Approach***	***Planned Analysis***
Assess current student athletes on psychological variables. *Create deliverables including evaluation report, process documents, best practices, and recommendations for prevention and intervention.*	*Participants in this research will include elite-level, non-professional S.A.s (S.A.) at a mid-major, Midwestern university.* *Sport included: male and female basketball, cross country, track and field, swimming and diving, and golf. Men's sports include baseball and football. Women's sports include soccer, softball, and volleyball.* *Participants will be from various countries, with the majority from the U.S.* *All participants will be 18 years of age or older.*	*Burnout – measured using the Athletic Burnout Questionnaire (ABQ)* *Depression – measured using the Beck Depression Inventory II* *Transition out of Sport – measured by the Life After Sports Scale (LASS)*	*Exploratory & Descriptive*	*Descriptive statistics* *Summative evaluation of current program*

Table 2

Descriptive Statistics for Assessment (N = 158)

Variables	*n*	M	SD
BDI	158	9.14	7.75
ABQ	158	37.15	11.68
BALANCE	158	38.28	7.98

Table 3

Descriptive Statistics Total ABQ Evaluations (N = 158)

Burnout Level	Frequency	Percentage
Low Risk	47	29.7
Mild	77	48.7
Moderate	26	16.5
Severe	8	4.4

*Note: percentages may not sum to 100 due to rounding

Table 4

Descriptive Statistics Men's Football ABQ Evaluations (n = 70)

Burnout Level	Frequency	Percentage
Low Risk	27	38.6
Mild	33	47.1
Moderate	8	11.4
Severe	1	1.4

*Note: percentages may not sum to 100 due to rounding

Table 5

Descriptive Statistics Men's Golf ABQ Evaluations (n = 8)

Burnout Level	Frequency	Percentage
Low Risk	2	25.0
Mild	5	62.5
Moderate	0	0.0
Severe	1	12.5

*Note: percentages may not sum to 100 due to rounding

Table 6

Descriptive Statistics Men's Track & Field ABQ Evaluations (n = 29)

Burnout Level	Frequency	Percentage
Low Risk	6	20.7
Mild	14	48.3
Moderate	6	20.7
Severe	3	10.3

*Note: percentages may not sum to 100 due to rounding

Table 7

Descriptive Statistics Women's Track & Field ABQ Evaluations (n = 35)

Burnout Level	Frequency	Percentage
Low Risk	6	17.1
Mild	17	48.6
Moderate	9	25.7
Severe	3	8.6

*Note: percentages may not sum to 100 due to rounding

Table 8

Descriptive Statistics Women's Volleyball ABQ Evaluations (n = 9)

Burnout Level	Frequency	Percentage
Low Risk	3	33.3
Mild	4	44.4
Moderate	2	22.2
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 9

Descriptive Statistics Total BDI Evaluations (N = 158)

Depression Level	Frequency	Percentage
Minimal	122	77.2
Mild	20	12.7
Moderate	9	5.7
Severe	7	4.4

*Note: percentages may not sum to 100 due to rounding

Table 10

Descriptive Statistics Men's Football BDI Evaluations (n = 70)

Depression Level	Frequency	Percentage
Minimal	58	82.9
Mild	8	11.4
Moderate	3	4.3
Severe	1	1.4

*Note: percentages may not sum to 100 due to rounding

Table 11

Descriptive Statistics Men's Golf BDI Evaluations (n = 8)

Depression Level	Frequency	Percentage
Minimal	8	100
Mild	0	0.0
Moderate	0	0.0
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 12

Descriptive Statistics Men's Track & Field BDI Evaluations (n = 29)

Depression Level	Frequency	Percentage
Minimal	23	79.3
Mild	3	10.3
Moderate	2	6.9
Severe	1	3.4

*Note: percentages may not sum to 100 due to rounding

Table 13

Descriptive Statistics Women's Track & Field BDI Evaluations (n = 35)

Depression Level	Frequency	Percentage
Minimal	21	60.0
Mild	7	20.0
Moderate	4	11.4
Severe	3	8.6

*Note: percentages may not sum to 100 due to rounding

Table 14

Descriptive Statistics Women's Volleyball BDI Evaluations (n = 9)

Depression Level	Frequency	Percentage
Minimal	7	77.8
Mild	2	22.2
Moderate	0	0.0
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 15

Descriptive Statistics Total BALANCE Evaluations (N = 158)

Transition Risk	Frequency	Percentage
Low Risk	14	8.9
Mild	126	79.7
Moderate	18	11.4
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 16

Descriptive Statistics Men's Football BALANCE Evaluations (n = 70)

Transition Risk	Frequency	Percentage
Low Risk	9	12.9
Mild	55	78.6
Moderate	6	8.6
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 17

Descriptive Statistics Men's Golf BALANCE Evaluations (n = 8)

Transition Risk	Frequency	Percentage
Low Risk	0	0.0
Mild	7	87.5
Moderate	1	12.5
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 18

Descriptive Statistics Men's Track & Field BALANCE Evaluations (n = 29)

Transition Risk	Frequency	Percentage
Low Risk	2	6.9
Mild	24	82.8
Moderate	3	10.3
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 19

Descriptive Statistics Women's Track & Field BALANCE Evaluations (n = 35)

Transition Risk	Frequency	Percentage
Low Risk	2	5.7
Mild	27	77.1
Moderate	6	17.1
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 20

Descriptive Statistics Women's Volleyball BALANCE Evaluations (n = 9)

Transition Risk	Frequency	Percentage
Low Risk	1	11.1
Mild	8	88.9
Moderate	0	0.0
Severe	0	0.0

*Note: percentages may not sum to 100 due to rounding

Table 21

Descriptive Statistics for Demographics (N = 158)

Variable	N	Percentage*
Sex		
Male	108	68.4
Female	50	31.6
Intersex	0	0.0
Prefer not to answer	0	0.0
Sport		
Women's Diving	2	1.3
Football	70	44.9
Men's Golf	8	5.1
Women's Swim	3	1.9
Women's Track	36	23.1
Men's Track	28	17.9
Volleyball	9	5.8
Ethnicity		
European	101	56.0
African	62	34.0
Asian	3	1.7
Hispanic/Latinx	4	2.2
Native American	7	3.9
Middle Eastern	2	0.01
Prefer not to answer	1	0.01
Age (in years)		
18	18	11.4
19	29	18.4
20	39	24.7

21	46	29.1
22	19	12.0
23	4	2.5
24	0	0.0
25+	3	1.9
Mother's Education Level		
Some H.S.	5	3.2
H.S. diploma	28	17.7
Some college	24	15.2
2-Year college degree	15	9.5
4-Year college degree	48	30.4
Professional school	4	2.5
Master's degree	31	19.6
Doctorate/Ph.D	3	1.9
Student Status		
Freshman	39	24.7
Sophomore	35	22.2
Junior	43	27.2
Senior	34	21.5
Graduate Student	7	4.4
Post-College Plan		
Unsure	13	8.2
Graduate school	44	27.8
Find a job	58	36.7
Play professionally	37	23.4
Other	6	3.8

*Note: percentages may not sum to 100 due to rounding

Table 22

Correlations for BDI, ABQ, & BALANCE

Variables	*n*	**M**	**SD**	**1**	**2**	**3**
BDI	158	9.14	7.75	1.00		
ABQ	158	37.15	11.68	.553**	1.00	
BALANCE	158	38.28	7.98	.403**	.386**	1.00

* $p < .05$, ** * $p < .01$

Table 23

Summary of Multiple Regression Analyses for Variables Predicting Vulnerability

	BDI			ABQ			BALANCE		
Variables	*B*	SE B	B	B	SE B	B	B	SE B	B
Sport	.794	.325	.196	1.154	.498	.185	.990	.337	.232
Ethnicity	.464	.303	.127	-.002	.465	.000	.472	.315	.123
Status	.150	.509	.024	-.110	.782	-.011	.298	.529	.044
SES	-.450	.325	-.110	-.137	.499	-.022	-.389	.338	-.091
Plan	-.984	.625	-.129	-2.000	.960	-.170	-1.243	.650	-.155
R_2		.039			0.36			.057	
F for change in R_2		2.253			2.172			2.876	

* $p < .05$, ** * $p < .01$

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APPENDIX A

CONSENT FORM

Dear participant,

The goal of this project is to broaden our understanding of S.A. psychological well-being. As a current S.A., you are the expert!

The survey takes 20 to 30 minutes to complete. You will simply be asked a series of questions and then answer based on your opinion. There are no dangers or risks posed in this study beyond those of everyday life.

Your responses will be logged, all information will be confidential (shared only with you and the researcher). Your participation is voluntary, and you may refuse to participate.

If you have any questions or concerns, please contact me using the information below.

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This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the committee chairperson, Office of Research Compliance, SIUC, Carbondale, IL 62901- 4344. Phone (618)-453-4533. E-mail: siuhsc@siu.edu

By clicking "next" below I certify that I am at least 18 years of age and consent to participate in this research.

APPENDIX B

DEMOGRAPHICS

Demographic Information:

Sex:

Male

Female

Intersex

Prefer not to answer

Gender:

Male/Man

Female/Woman

Transgender

Gender queer/Gender non-conforming

Gender non-binary

Other (please specify)

Prefer not to answer

Age:

18

19

20

21

22

23

24

25+

Ethnicity:

European or European American/White

African or African American/Black

Asian or Asian American

Hispanic/Latinx

Native American

Other (Please specify)

Prefer not to answer

Current Student Status:

Freshman

Sophomore

Junior

Senior

Graduate Student

Mother's Highest Level of Education:

Some high school

High school diploma

Some college

2-year college degree

4-year college degree

Professional school

Master's degree

Doctorate/Ph.D

Post-College Plan:

Unsure

Graduate school

Find a job

Play professionally

Other (please specify)

Sport:

Baseball

Women’s basketball

Men’s basketball

Women’s cross country

Men’s cross country

Diving

Football

Women’s golf

Men’s golf

Soccer

Softball

Women’s swimming

Men’s swimming

Women’s track and field

Men’s track and field

Volleyball

APPENDIX C

TEAM REPORT EXAMPLE

Below are the levels of burnout, depression, and transition out of sport readiness for your team.

Your team had 70 completed surveys.

Burnout

Burnout Level	# of Athletes	Percentage
Low Risk	27	38.6
Mild	33	47.1
Moderate	8	11.4
Severe	1	1.4

Depression

Depression Level	# of Athletes	Percentage
Minimal	58	82.9
Mild	8	11.4
Moderate	3	4.3
Severe	1	1.4

Transition Readiness – How likely are athletes to have trouble transitioning out of sport?

Transition Risk	# of Athletes	Percentage
Low Risk	9	12.9
Mild	55	78.6
Moderate	6	8.6
Severe	0	0.0

Strengths

- Most athletes are in the low risk and mild categories
- No athletes were at a severe risk for transition issues
- 90% of athletes reported that they have transferrable skills for the job market
- 88% reported good social support
- 73% said they felt prepared for future careers
- 86% reported that they had access to career services

Recommendations

- Burnout
    - 60% of athletes are experiencing burnout.
    - The most common issue was mental and physical exhaustion.
    - While exhaustion is unavoidable in sport, constant states of exhaustion can lead to increased levels of burnout down the line.
- Depression
    - 17.1% of athletes reported mild, moderate, or severe levels of depression.
    - 93% of athletes indicated at least one depression symptom.
    - These symptoms include: sadness, feelings about the future, feelings of failure, life satisfaction, guilt, feelings of being punished, disappointment in self, assessment of weaknesses, suicidal ideation, crying, irritation, interest in others, decision-making, body image, productivity, sleep disturbance, fatigue, appetite, weight loss, concern about health, and libido.
    - The most common symptom was being self-critical for weakness or mistakes.
    - Suicidal thoughts were present in 14% of the athletes.

    - Avoid the assumption that athletes (especially male athletes) are not at risk for depression.
    - Normalize conversations about depression, similar to conversations about physical health issues.
- Transition Risk
    - 87.2% of athletes are at mild or moderate risk for transition issues.
    - The strongest predictor for transition issues is a strong athletic identity, especially if this is the most important or only identity.
        - Strong athletic identities are great and can aid performance during eligibility.
        - Yet when they must transition out of sport, they may have to restructure their entire identity.
    - Take the time to recognize that transitioning out of sport is hard, whether from an injury, not going on to play professionally, or simply because they used up eligibility.
    - While statistically only 2% of NCAA athletes go on to play professionally, 23% of athletes said they planned to play professionally.
    - Discussing development of other plans and identities will help athletes thrive.

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Getting Ahead of the Game: A Preventative Assessment for Intercollegiate Athletics

Major Professor: Dr. Julie A. Partridge

Publications:

Feeser, K. M. (2020). Getting Ahead of the Game: A Preventative Assessment for Intercollegiate Athletics. Presented at the Association for Psychological Sciences (APS) 2020 Convention, Chicago Illinois.

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